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# UNDESCRIBED CRANE FLIES FROM FORMOSA AND LUZON (TIPULIDÆ, DIPTERA)

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All but one of the new species of crane flies described in the present paper were collected in Formosa (Taiwan) by Dr. Teiso Esaki during his recent collecting trip (August to October, 1921) to that island. The majority of these species were collected in the high mountains, which support a rich endemic tipulid fauna. The interesting new *Pselliophora* was collected by Dean C. F. Baker in northern Luzon. My thanks are extended to Doctor Esaki and Dean Baker for the privilege of studying these highly important collections. The Formosan types are preserved in my collection through the generosity of Doctor Esaki.

**Trichocera flavoides** sp. nov.

General coloration pale yellow, the terminal segments of the palpi, the antennal flagellum, and the legs pale brown; wings pale yellow.

*Female.*—Length, 3.2 millimeters; wing, 3.5 to 3.6. Rostrum and basal segment of palpus yellow, the remainder of the palpi dark brown. Antennal scape light yellow, the flagellum pale brown. Head pale yellow.

Mesonotum almost white, the pleura pale yellow. Halteres pale yellowish white. Legs with the coxæ and trochanters pale yellow; remainder of the legs pale brownish testaceous. Wings with a pale yellow tinge; veins pale. Venation: $Sc_1$ ending opposite the fork of $R_{2+3}$; $R_{2+3}$ about equal to the first section of $R_2$; basal deflection of $R_{4+5}$ very short, oblique; cell 1st $M_2$

very narrow, the inner end acutely pointed; m-cu longer than m, almost in alignment with $M_{3+4}$, beyond midlength of cell 1st $M_2$; basal deflection of $Cu_1$ about one-half its length beyond the fork of $M_{3+4}$.

Abdomen pale yellow; ovipositor with the valves pale.

*Habitat.*—Formosa.

Holotype, female, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 17, 1921 (*T. Esaki*). Paratopotypes, 1 female, with the type; 1 female, August 19, 1921.

*Trichocera flavoides* is perhaps only a variety of *T. flava* Brunetti of northern India, but there are some venational and colorational characters that seem to be of more than subspecific importance. *Trichocera flava* is the same as *Paracladura gracilis* Brunetti, an earlier name, but as there is already a *Trichocera gracilis* Walker, the name *flava* should be used.

### **Libnotes subopaca** sp. nov.

General coloration orange-yellow; femora obscure yellow, the tips broadly dark brown; wings with a strong fulvous tinge, the stigma and a small apical spot darker brown; basal deflection of $Cu_1$ at two-fifths the length of cell 1st $M_2$.

*Male.*—Length, 10 millimeters, wing, 13.7. Rostrum dark brown; palpi brownish black. Antennæ dark brown, the second scapal segment obscure brownish yellow. Head saturated fulvous yellow; vertex between the eyes narrow.

Mesonotal præscutum orange-yellow, the remainder of the notum and the pleura more yellow. Halteres dark brown, the base of the stem narrowly yellow. Legs with the coxæ and trochanters yellow; femora obscure yellow, the tips broadly dark brown; tibiæ yellow, the tips narrowly darkened; tarsi yellowish brown, the terminal segments dark brown. Wings with a strong fulvous tinge; stigma conspicuous, elongate, brown; extreme tip of the wing in cells 2d $R_1$, $R_3$, and $R_5$ narrowly infuscated; veins dark brown. Venation: $Sc_2$ at tip of $Sc_1$; r long, bent almost at a right angle; m and outer deflection of $M_3$ subequal in length, the inner ends of the cells in alignment; basal deflection of $Cu_1$ at two-fifths the length of cell 1st $M_2$.

Abdomen orange-yellow, the lateral line narrowly infuscated; hypopygium dark brown.

*Habitat.*—Formosa.

Holotype, male, Urai, altitude about 1,500 feet (about 450 meters), October 1, 1921 (*T. Esaki*).

*Libnotes subopaca* is most closely related to *L. opaca* Bezzi, of Luzon.

**Dicranomyia tattakæ sp. nov.**

General coloration gray, the mesonotal præscutum with three more or less confluent dark brown stripes; pleura with a narrow black longitudinal stripe; wings faintly tinged with gray; brown spots at arculus, at origin of Rs and at the stigma; veins beyond cell 1st $M_2$ short.

*Male.*—Length, about 5 millimeters; wing, 7.2. Rostrum and palpi brownish black. Antennæ dark brownish black throughout. Head light gray.

Mesonotal præscutum yellowish gray with three dark brown stripes, the anterior ends of the lateral stripes confluent with the median stripe, restricting the interspaces to linear stripes before the suture; humeral region clearer gray; scutum gray, the lobes dark brown; remainder of the mesonotum dark brown, sparsely pruinose. Pleura dark gray with a very narrow but conspicuous black longitudinal stripe extending from above the fore coxa to the base of the abdomen, passing immediately ventrad of the root of the halteres. Halteres obscure yellow, the knobs a little darker. Legs with the coxæ dark, sparsely pruinose; trochanters brown; femora brown, the extreme bases pale, the tips broadly blackened, the extreme apices indistinctly pale; tibiæ and metatarsi brown, the tips blackened; remainder of the tarsi black. Wings with a faint gray tinge, sparsely spotted with brown; a conspicuous spot at arculus; a second spot at origin of Rs; stigma small, subcircular in outline; narrow brown seams along the cord and outer end of cell 1st $M_2$; anal angle faintly infuscated; veins brown, those in the costal region a little more yellowish. Venation: Sc short, $Sc_1$ ending opposite the origin of Rs, $Sc_2$ at its tip; Rs feebly angulate at origin, not quite twice the deflection of $R_{4+5}$; cell 1st $M_2$ long and narrow, longer than any of the veins issuing from it, more than twice the distal section of $Cu_1$; basal deflection of $Cu_1$ before the fork of M, the distance a little longer than r-m.

Abdomen dark brown. Male hypopygium with the ventral pleural appendage large, produced into a conspicuous rostrum that bears two spines; mesal face of pleurite produced into a conical lobe, the mesal face and apex of which is setiferous.

*Habitat.*—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 16, 1921 (*T. Esaki*).

*Dicranomyia tattakæ* is related to *D. basifusca* Alexander, of Japan.

**Dicranomyia curvispina** sp. nov.

General coloration obscure yellow; head black; wings with a strong brownish tinge, the stigma darker; Sc long, cell 1st $M_2$ closed; abdominal tergites dark brown, the sternites bicolorous; mesal pleural appendage of male hypopygium bearing a long, curved spine.

*Male.*—Length, 6 millimeters; wing, 7.5. Rostrum and palpi black. Antennæ dark brown, the flagellar segments elongate. Head dark brown.

Pronotum dark medially, obscure yellow laterally. Mesonotal præscutum shiny yellow, broadly infuscated on the cephalic margin; remainder of the mesonotum obscure yellow. Pleura yellow, the dorsal sclerites a little infuscated. Halteres elongate, brown, a little paler at the extreme base of the stem. Legs with the coxæ and trochanters yellow; femora pale brown, the tips broadly darkened; tibiæ and tarsi dark brown. Wings with a strong brown tinge; stigma oval, darker brown; veins dark brown. Venation: Sc moderately long, $Sc_1$ ending just before one-third the length of Rs, $Sc_2$ at its tip; Rs long, almost straight; r at tip of $R_1$; inner end of cell $R_3$ far proximad of cell $R_5$; cell 1st $M_2$ pentagonal, gently widened distally; m about two-thirds the outer deflection of $M_3$; distal section of $M_{1+2}$ longer than cell 1st $M_2$; basal deflection of $Cu_1$ one-half longer than $Cu_2$, situated some distance beyond the fork of M.

Abdominal tergites dark brown; sternites obscure yellow, the incisures conspicuously dark brown, increasing in extent on the subterminal segments. Male hypopygium obscure brownish yellow. Mesal pleural appendage bearing a single, very long and conspicuous spine far before the tip, this strongly bent near one-third its length, the apical two-thirds appearing as a long, black spine.

*Habitat.*—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 18, 1921 (*T. Esaki*).

**Molophilus arisanus** sp. nov.

General coloration brown; antennæ short; wings uniformly tinged with brown; vein 2d A ending far beyond the basal deflection of $Cu_1$; male hypopygium with the inner pleural appendage bifid.

*Male.*—Length, 3.1 millimeters; wing, 4.5. Rostrum pale brown, the palpi brownish black. Antennæ short, if bent backward not attaining the wing root, pale brownish testaceous, the basal segment darker. Head grayish brown.

Mesonotum brown, the præscutum darker brown medially, the lateral margins narrowly whitish. Pleura pale brown with indications of a darker brown, longitudinal stripe. Halteres yellow. Legs with the coxæ and trochanters yellow, the posterior coxæ dark; remainder of the legs dark brown. Wings tinged with brown, the macrotrichiæ dark brown. Venation: Vein 2d A elongate, ending far beyond the basal deflection of $Cu_1$.

Abdomen dark brown, the hypopygium only a little paler. Male hypopygium with the outer pleural appendage slender, slightly curved to the long, acute, black tip; inner appendage complex, before the apex split into two long spines.

*Habitat.*—Formosa.

Holotype, male, Arisan, altitude 7,362 feet (about 2,250 meters), August 24, 1921 (*T. Esaki*).

**Erioptera (Erioptera) rogersi sp. nov.**

General coloration pale yellowish white; antennæ yellow, the first scapal segment dark; femora pale fulvous with a snowy white ring before the tips; tibiæ yellow, the bases narrowly white; wings pale fulvous yellow, narrowly darker along the cord.

*Male.*—Length, 4.5 millimeters; wing, 4.6. Rostrum and palpi pale brown. Antennæ with the basal segment pale brown, the remainder of the organ light yellow. Head pale cream color, covered with a microscopic white bloom; eyes of male large, contiguous beneath.

Pronotum and mesonotum almost white, immaculate. Pleura pale yellowish white. Halteres pale yellow. Legs with the coxæ and trochanters concolorous with the pleura; femora pale fulvous, paler at base, immediately before the tips with a narrow, snow-white band which is provided with snowy white setæ, the extreme apex narrowly darkened; tibiæ yellow, the extreme base snowy white; tarsi yellow. Wings pale fulvous yellow with indications of a broad, paler band before the cord, the latter narrowly seamed with darker; veins yellow with fulvous macrotrichiæ, darker colored in the infuscated area. Venation: As in the subgenus, vein 2d A strongly sinuous.

Abdomen pale whitish yellow, the sternites beyond the base a little more saturated; a narrow, brown, lateral line on the basal half of the abdomen. Male hypopygium with the pleurites unusually elongate, each pleural appendage very long and slender, the acute tip slightly curved. The gonapophyses appear as two short, curved horns on either side, the tips directed mesad.

*Habitat.*—Formosa.

Holotype, male, Kanshirei, altitude about 1,000 feet (about 300 meters), September 10, 1921 (*T. Esaki*).

This handsome *Erioptera* is named in honor of my friend Prof. J. Speed Rogers, in appreciation of his critical studies on the Nearctic species of *Erioptera*.

**Gnophomyia brevicellula** sp. nov.

General coloration dark brown; antennæ of the male elongate, densely pubescent; wings grayish subhyaline; r-m before the fork of Rs; the veins issuing from cell 1st $M_2$ very long, the shortest two and one-half times the length of the cell; basal deflection of $Cu_1$ at midlength of the cell.

*Male.*—Length, 5.5 millimeters; wing, 6. Rostrum and palpi obscure brownish yellow. Antennæ elongate, if bent backward extending nearly to the base of the third abdominal segment, light brown, the elongate flagellar segments densely clothed with an erect white pubescence. Head brown.

Pronotum obscure yellow laterally. Mesonotum dark brown, rather shiny. Pleura brown with a narrow, ventral, gray, longitudinal stripe; sternites testaceous. Halteres dark brown. Legs with the coxæ and trochanters testaceous; remainder of the legs dark brown. Wings grayish subhyaline, the veins dark brown; stigma little evident. Venation: Sc long, $Sc_1$ ending beyond the fork of $R_{2+3}$; Rs gently arcuated, r-m connecting with Rs about one-half its own length before the fork of Rs; basal section of $R_2$ a little shorter than r-m; cell 1st $M_2$ small, elongate, widened distally, m a little shorter than the outer deflection of $M_3$; veins issuing from cell 1st $M_2$ very long, the shortest (distal section of $Cu_1$) two and one-half times the cell; basal deflection of $Cu_1$ near midlength of the cell.

Abdominal tergites dark brown, the sternites paler. Male hypopygium with the longest pleural appendage a long, slender, somewhat flattened blade.

*Habitat.*—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 16, 1921 (*T. Esaki*).

**Xipholimnobia formosensis sp. nov.**

General coloration pale brown, the mesonotal scutellum and postnotum dark brown, dusted with gray; pleura brown with a narrow, longitudinal, silvery gray stripe; legs brown; wings with a uniform brown tinge; distal section of $R_1$ entirely atrophied; abdomen dark brown, the valves of the ovipositor a little less than one-half the length of the abdomen.

*Female.*—Length, about 4 millimeters: wing, 3.5. Rostrum and palpi brown. Antennæ pale brown. Head brown.

Mesonotal præscutum pale brown, the median area of the scutum light gray, the lobes concolorous with the præscutum; scutellum and postnotum dark brown, sparsely dusted with gray. Pleura brown with a narrow, longitudinal, silvery gray stripe extending to the base of the abdomen. Halteres with the sternites obscure yellow, the knobs dark brown. Legs with the coxæ small, testaceous; trochanters testaceous; remainder of the legs brown. Wings with a uniform brownish tinge; stigma lacking; veins pale brown. Venation: Sc long, $Sc_1$ ending about opposite four-fifths the length of the long Rs, $Sc_2$ subobsolete, a short distance from the tip of $Sc_1$, the latter alone about equal to m; distal section of $R_1$ entirely atrophied as in the genus, the vein appearing to end in $R_2$; r provided with two macrotrichæ; Rs in alignment with $R_{2+3}$; basal section of $R_2$ perpendicular; inner ends of cells $R_3$, $R_5$, and 1st $M_2$ in alignment; cell 1st $M_2$ gently widened distally, m and the outer deflection of $M_3$ subequal; basal deflection of $Cu_1$ near four-fifths the length of the caudal face of cell 1st $M_2$.

Abdomen dark brown, the valves of the ovipositor concolorous. Ovipositor with the valves a little less than half the length of the abdomen, long and straight as in the genus.

*Habitat.*—Formosa.

Holotype, female, Kanshirei, altitude about 1,000 feet (about 300 meters), September 10, 1921 (*T. Esaki*).

*Xipholimnobia formosensis* agrees closely with the genotype, *X. terebrina* Alexander, of West Africa, and there is no doubt as to the correctness of the generic reference. The chief venational peculiarities of the genus are the atrophy of the distal section of $R_1$ with the corresponding appearance of vein $R_1$ ending in vein $R_2$ as in most Cylindrotominæ, and the position of the basal deflection of $Cu_1$ near the outer end of cell 1st $M_2$. The valves of the ovipositor in the present species are very long and slender, but not so excessively so as in the genotype.

**Trentepohlia (Trentepohlia) pulchripennis sp. nov.**

Head dark brown, the anterior part of the vertex obscure yellow; antennæ dark brown; mesonotum light yellow, the postnotum dark brown; pleura broadly dark brown; wings whitish hyaline with three conspicuous brown crossbands variegated with white spots.

*Male.*—Length, 5.5 millimeters; wing, 5.6.

*Female.*—Length, 6 millimeters; wing, 5.3.

Rostrum and palpi dark brown; mouth parts obscure yellow. Antennæ dark brown, the basal flagellar segments feebly bicolorous, the bases paler than the remainder of each segment. Head dark brown, the anterior part of the vertex obscure yellow.

Pronotum brownish black. Mesonotal præscutum light yellow, unmarked; scutum and scutellum obscure brownish yellow; postnotum dark brown with a small, obscure yellow, median spot before the caudal margin. Pleura dark brown, the sternum and the dorsal pleurites obscure yellow. Halteres yellow, the knobs dark brown. Legs with the fore coxæ brown; hind coxæ yellow, brown basally; remainder of the legs obscure yellow; no conspicuous armature on femora or tibiæ. Wings whitish hyaline with a very heavy dark brown pattern; base pale; a basal brown band across the wing, from just beyond h, including almost all of cell 2d A; a very broad brown band at the level of the origin of Rs, extending from before Rs to just beyond the tip of $Sc_1$, including cells C, Sc, 1st $R_1$ (the latter with a pale spot in the male), the outer ends of cells R and M except large white blotches; in cells Cu and 1st A the band is much paler, grayish; remainder of the cord and the base of cell $R_3$ conspicuously darkened; the apical band is entirely separate from the middle band, including the distal two-thirds of cell 2d $R_1$, all of cell $R_2$ except an oval spot near the tip of $R_2$ and the extreme apex; the distal two-thirds of cell $R_3$ except the extreme apex; all of cell $R_5$ except an oval spot in the base and the extreme apex; outer two-thirds of cell $M_2$ darkened; outer angle of cell $Cu_1$ slightly paler brown; veins dark brown in the infuscated areas, yellowish elsewhere.

Venation: r very short, less than the tip of $R_1$ beyond it; petiole of cell $R_5$ a little longer than the basal section of $M_{1+2}$.

Abdomen dark brown, the basal sternites and the hypopygium obscure brownish yellow. Ovipositor with the valves conspicuously yellow.

*Habitat.*—Formosa.

Holotype, male, Musha, altitude about 3,500 feet (about 1,050 meters), August 15, 1921 (*T. Esaki*). Allotype, female, Sumaän, altitude about 2,500 feet (about 760 meters), August 21, 1921 (*T. Esaki*).

*Trentepohlia pulchripennis* is related to *T. ornatipennis* Brunetti, of southwestern India, and *T. pictipennis* Bezzi, of Luzon, in the general character of the wing pattern, but is distinct from any described species.

**Trentepohlia (Mongoma) esakii** sp. nov.

*Female.*—Length, 9 millimeters; wing, 7.7. Allied to *T.* (*M.*) *pennipes* (Osten Sacken), differing as follows: Head dark gray, the occiput obscure yellow. Mesonotal præscutum brown, the lateral margins and humeral angles narrowly obscure yellow. Legs with the femora pale brown, the tips rather narrowly (1 millimeter) white; tibiæ dark brown, the tips broadly white, on the middle legs occupying about the distal third of the segment; tarsi white. The white distal third of the midtibia is distinctly fringed with conspicuous white setæ as in the *pennipes* group. Midfemur with about nine stout spines near the base, with other additional spines arranged in a row, these becoming more elongate and more distant from one another toward the outer end of the sclerite, the apical ones appearing bristlelike. Wings whitish subhyaline; veins brown. Venation: $Sc_1$ about equal to $R_2$; r a little more than its length before the fork of $R_{2+3}$; $R_2$ gently sinuous.

*Habitat.*—Formosa.

Holotype, female, Musha, altitude about 3,500 feet (about 1,060 meters), August 15, 1921 (*T. Esaki*).

*Trentepohlia esakii* is named in honor of the collector. It is related to *T. pennipes* (Osten Sacken) and *T. tarsalis* Alexander in the feathered midtibial apices, but is very distinct in the conspicuous white femoral tips.

**Ceratocheilus taiwanicola** sp. nov.

General coloration dark brown; mesonotal præscutum yellowish gray with three dark brown stripes; legs dark brown; abdomen uniformly dark brown, only the hypopygium paler.

*Male.*—Length, excluding rostrum, 4.6 millimeters; wing, 5.4. Rostrum elongate, brownish black. Antennæ dark brown. Vertex between the eyes broad, dark brown, the anterior portion and a narrow margin adjoining the eyes light gray.

Mesonotal præscutum yellowish gray with three conspicuous dark brown stripes; scutum dull gray, the lobes brown; remainder of the mesonotum dark gray. Pleura dark gray, the dorsal sclerites indistinctly darker; sternites more plumbeous. Halteres testaceous. Legs with the coxæ and trochanters pale brownish testaceous; remainder of the legs dark brown, only the femoral bases narrowly paler. Wings pale grayish subhyaline; veins pale brown. Venation: $Sc_1$ ending a short distance beyond the origin of Rs, $Sc_2$ a slightly greater distance before this origin; basal deflection of $Cu_1$ about one-fifth its length beyond the fork of M.

Abdomen dark brown, only the hypopygium paler.

*Habitat.*—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 18, 1921 (*T. Esaki*).

## Genus TAIWANOMYIA novum

Antennæ elongate, in the male twice as long as the body, in the female extending to beyond the wing root, 16-segmented. Tuberculate pits elongate-oval, lying close together a short distance back from the cephalic margin of the præscutum. Tibiæ spurred; claws small, simple; empodia distinct. Wings with Sc long, $Sc_1$ ending a short distance before r-m, $Sc_2$ a short distance from the tip of $Sc_1$; Rs angulated or spurred at origin; $R_{2+3}$ very long, about equal to or longer than its fork; r close to the fork of $R_{2+3}$ and about twice its length from the tip of $R_1$; deflection of $R_{4+5}$ very long, subequal to Rs; cell $M_1$ lacking; outer deflection of $M_3$ long and arcuated; basal deflection of $Cu_1$ from one and one-half to nearly twice its length before the fork of M; vein 2d A ending beyond the level of the origin of Rs; arculus complete. Ovipositor with all valves long and straight, the sternal valves a little exceeding the stouter tergal valves.

Genotype, *Taseocera fragilicornis* Riedel, of Formosa.

Riedel failed to detect the tibial spurs and placed this fly in the tribe Eriopterini. The genus is a very isolated one, and no immediate relatives can be indicated. The chief venational peculiarities are the long deflection of $R_{4+5}$ which is approximately as long as Rs and the position of the basal deflection of $Cu_1$ which is far before the fork of M. *Taseocera* Skuse is well distinguished by the extreme brevity of vein 2d A.

### Taiwanomyia fragilicornis (Riedel).

*Taseocera fragilicornis* RIEDEL Archiv für Naturgeschichte, 82 Jahrg., Abt. A, 5 Heft (1916) 112, 113.

Riedel had only a single male. I have before me seven females from Kuraru, Formosa, August 30 to September 5, 1921, collected by Teiso Esaki, one of which is here designated as allotypic.

Allotype, female, length, 4 millimeters; wing, 3.9 to 4. Differs from the description of the male as follows:

Basal segment of the scape brownish black, the second segment conspicuously cream-yellow; antennæ shorter, the flagellar segments elongate-cylindrical with short verticils. Pleura brown with a narrow, blackish, longitudinal stripe. Legs with the coxæ and trochanters dark brown; femora light brown, gradually passing into dark brown, the extreme tips pale; tibiæ brown, the tips narrowly darkened, the extreme bases white; tarsi pale brown. Wings grayish subhyaline, heavily spotted and clouded with brown, there being from five to eight larger areas in cell C, the more-conspicuous ones extending caudad into cell Sc. Vein Sc long, $Sc_1$ ending about opposite three-fourths the length of the deflection of $R_{4+5}$, $Sc_2$ about one-third $Sc_1$; r about twice its length from the tip of $R_1$; cell 1st $M_2$ narrow at the proximal end which is only about one-half as long as r-m; m about one-third to one-fourth the outer deflection of $M_3$; cell 1st $M_2$ approximately as long as the longest vein issuing from it ($M_{1+2}$); cell $Cu_1$ very deep, due to the basal recession of the deflection of $Cu_1$.

Allotype, female, Kuraru, Formosa, September 1, 1921 (*T. Esaki*).

### Limnophila illustris sp. nov.

Related to *L. ochracea* Meigen; mesonotal præscutum pale brown with three yellowish brown stripes; thoracic pleura with a narrow, dark brown, longitudinal stripe; wings with a strong brownish tinge; anterior arculus nearly atrophied; abdominal sternites yellow, ringed with dark brown.

*Female.*—Length, 7 millimeters; wing, 7.6. Rostrum and palpi brown. Antennæ rather elongate, if bent backward attaining the wing root, dark brown, the first flagellar segment pale on the basal third. Head pale yellowish brown.

Pronotum pale. Mesonotal præscutum pale brown, the three usual stripes more yellowish brown; tuberculate pits lacking; remainder of the mesonotum brown. Pleura brownish yellow with a conspicuous dark brown longitudinal stripe extending to the base of the abdomen. Halteres with the stem pale brown, the base narrowly yellow, the knobs dark brown. Legs with the coxæ concolorous with the pleura; trochanters similar, infuscated apically; remainder of the legs brown, the terminal tarsal segments darker brown. Wings with a strong brown tinge; stigma elongate-oval, darker brown; a very faint infuscation along the cord and at the origin of Rs; veins dark brown. Venation: $Sc_1$ ending opposite the end of Rs, $Sc_2$ its own length from the tip of $Sc_1$; Rs relatively short, feebly angulated near origin; $R_{2+3}$ moderately elongate, gently arcuate, about equal to the first section of $R_2$; r a little more than its own length from the tip of $R_1$; inner ends of cells $R_3$, $R_5$, and 1st $M_2$ about in alignment; cell 1st $M_2$ rather short-pentagonal; petiole of cell $M_1$ rather short, about equal to the second section of $M_{1+2}$ basal deflection of $Cu_1$ at three-fifths the length of cell 1st $M_2$; anterior arculus almost obliterated.

Abdominal tergites dark brown; sternites pale yellow, each ringed before midlength with dark brown.

*Habitat.*—Formosa.

Holotype, female, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 17, 1921 (*T. Esaki*).

**Elephantomyia major uniformis** subsp. nov.

*Male.*—Length, excluding rostrum, 9.5 millimeters; wing, 8.5. Differs from typical *E. major* Alexander, of Kotosho Island, as follows: Smaller. Antennæ black throughout. Mesonotal præscutum reddish brown with a conspicuous black median stripe, broadest in front, narrowed behind, becoming obsolete near the suture. Pleura conspicuously light gray pruinose. Legs with the coxæ infuscated on their outer faces. Abdominal tergites dark brown; basal sternites indistinctly bicolorous, the subterminal segment entirely black.

*Habitat.*—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 16, 1921 *(T. Esaki).*

**Tricyphona symphyletes sp. nov.**

In its general appearance close to *T. kuwanai* Alexander, but in the structure of the male hypopygium more like *T. trispinosa* Alexander.

*Male.*—Length, about 8 millimeters; wing, 9.3. Smaller than *T. kuwanai.* Cephalic lateral portion of scutal lobes with a semilunar dark brown spot, the posterior portion of the lobes less distinctly infuscated; scutellum and postnotum yellow. Legs light yellow, the segments not distinctly darkened at tips. Wings with the costal streaks as in *T. kuwanai;* a conspicuous dark brown seam along the basal fourth of M; a pale brown seam on the basal deflection of $Cu_1$, the remainder of the cord nearly clear; the brown oblique cloud extends across the wing to m but does not reach the margin as in *T. trispinosa.* Venation: r-m connecting with Rs nearly its own length before the fork; petiole of cell $R_3$ short, a little less than one-half m; basal portion of $R_{2+3}$ perpendicular, bent at a strong angle, the free portion of $R_2$ very short, $R_{2+3}$ being bent close to $R_1$ at this point widening cell $R_3$; cell $R_4$ very wide near midlength, correspondingly narrowed at the distal end; m present, transverse, connecting $M_2$ with $M_3$, the latter just beyond midlength; basal deflection of $Cu_1$ immediately beyond the fork of M.

Male hypopygium with but three black spines on the pleural appendage as in *T. trispinosa,* the notch between these and the apical point circular in outline. Gonapophyses with the lateral margin almost straight to the apex, not bulged outward before the apex as in *T. kuwanai.*

*Habitat.*—Formosa.

Holotype, male, Musha, altitude about 3,500 feet (about 1,060 meters), August 20, 1921 (*T. Esaki*).

**Phalacrocera formosæ sp. nov.**

Head shiny dark brown, the inner margin of the eyes obscure greenish; præscutum shiny obscure yellow with three dark brown stripes, the median stripe split by a pale line; scutal lobes and scutellum brownish black; pleura and sternum pale green; wings with a strong brown tinge; cell 2d A narrow; abdominal tergites brown, the sternites obscure brownish yellow.

*Female.*—Length, 10 millimeters; wing, 11.2. Frontal prolongation of the head very short; palpi greenish brown. Antennal scape pale green, the flagellum dark brown; flagellar segments beyond the fourth cylindrical with conspicuous verticils. Head shiny dark brown, the inner margin of the eyes obscure greenish.

Mesonotal præscutum shiny obscure yellow with three dark brown stripes, the median stripe broadly split by a pale line; scutum obscure brownish yellow, each lobe with a conspicuous dark brownish black blotch; scutellum black; postnotum obscure brownish yellow. Pleura and sternum pale greenish. Halteres elongate, dark brown, the extreme base of the stem greenish. Legs with the coxæ and trochanters pale green; tibiæ and tarsi brown, the tips faintly darkened; tarsi dark brown. Wings with a strong brown tinge; stigma small and narrow, pale brown; veins dark brown, very conspicuous. Venation: $Sc_2$ not far from the tip of $Sc_1$; tip of $R_1$ barely indicated; $R_2$ entirely atrophied; deflection of $R_{4+5}$ longer than r-m; m and outer deflection of $M_3$ subequal; basal deflection of $Cu_1$ about two-thirds its length beyond the fork of M; cell 2d A very narrow for a member of this genus.

Abdominal tergites dark brown, the sternites obscure brownish yellow.

*Habitat.*—Formosa.

Holotype, female, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 19, 1921 (*T. Esaki*).

**Pselliophora igorota sp. nov.**

General coloration orange; antennal flagellum with only nine segments; tibiæ yellow with about the middle half dark brown; wings yellow, the cells beyond the cord a little darker; abdominal segments orange.

*Female.*—Length, about 15 millimeters; wing, 15. Frontal prolongation of the head orange; palpi reddish brown, the terminal segment dark brown. Antennæ with only eleven segments as in *P. bicinctifer*, the subterminal flagellar segments almost globular; antennæ orange-yellow throughout. Head obscure orange.

Mesonotal præscutum orange-yellow with three ill-defined reddish stripes, the median stripe broader and better defined; remainder of the mesonotum obscure orange. Pleura obscure orange. Halteres obscure orange. Legs with the coxæ and trochanters obscure orange; femora yellow with the extreme tips indistinctly darker; tibiæ obscure yellow with more than the central half dark brown; metatarsi brownish yellow, the tips darkened; tarsi dark brown. Wings with a strong yellow tinge, the cells beyond the cord a very little darker; stigma small, oval, dark brown; veins pale brown. Venation: r on $R_2$ immediately beyond the fork of $R_{2+3}$; petiole of cell $M_1$ very short, about equal to r-m.

Abdominal tergites orange, the basal segments with dark egg masses showing through the chitin.

*Habitat.*—Luzon.

Holotype, female, Baguio, Benguet, Mountain Province (*C. F. Baker*). Type returned to Dean Baker.

*Pselliophora igorota* requires comparison only with *P. bicinctifer* Alexander, from the same locality; the latter species has the general coloration black, the first scapal segment brownish black, the tips of the tibiæ dark brown; wings with the apex more conspicuously infuscated.

# ACHILIXIUS, A NEW GENUS, CONSTITUTING A NEW FAMILY OF THE FULGOROIDEA (HOMOPTERA)

By F. MUIR

*Of the Hawaiian Sugar Planters' Experiment Station, Honolulu*

ONE PLATE

In 1914 Melichar described a Philippine homopteron as *Syntames tubulifer*.[1] In 1917 I rejected this species from the Derbidæ[2] because of the long apical joint of the rostrum and suggested that it represented a new genus of Cixiidæ.

I have recently been reconsidering the classification of the Fulgoroidea, with the result that I am unable to place this species in either the Cixiidæ or the Achilidæ, although it has certain characters of both of these families. The venation of the tegmen would place it in the Achilidæ, the claval vein running into the apex of the clavus which is roundly closed; but the male genitalia are quite different from all of the Achilidæ with which I am acquainted. The general facies of the insect also differs considerably from that of the Achilidæ, the body not being flattened, and the tegmina are fairly steeply tectiform. While the male genitalia might find a place in the Meenoplinæ (Cixiidæ) and the abdominal appendages are similar to those found in *Benna* and *Bennaria*, the venation is not of the cixiid type. The type of male genitalia found in the Derbidæ is distinct from that of all other fulgorids and will not allow of the species under consideration being placed therein. To place it in any one of these three families would only lead to confusion by breaking down good family characters. Therefore, I consider it better to place it in a family by itself whose nearest relationship would be with the Meenoplinæ (Cixiidæ).

## Family ACHILIXIIDÆ novum

### Genus ACHILIXIUS novum

Vertex and face in profile forming a curve without any division between them; in dorsal view the vertex is much wider

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[1] Philip. Journ. Sci. § D 9 (1914) 269.

[2] Philip. Journ. Sci. § D 12 (1917) 59.

than long; the median and lateral carinæ continued on to the face, which is but very slightly narrowed between the eyes. Clypeus tricarinate, the median carina obscure. Antennæ reaching to base of clypeus, first segment as wide as long, second narrow at base, thickened on apical portion. Posterior margin of pronotum very shallowly emarginate, obscurely tricarinate, the lateral carinæ widely diverging on posterior half and joining hind margin near tegulæ; the three carinæ of mesonotum straight, parallel, obscure. In the tegmina Sc and R separate about one-third from base of tegmen; four branches of R at apex; Cu1 and Cu1a touch for a short distance before apex. Near the base of the abdomen there are two pairs of processes arising from the pleura; the first two processes are longer than broad, narrowed at base, slightly flattened, and bear two depressions on apex; the second two are not so long and appear more like swellings on the pleura than processes, and each bears a small depression on apex. The pygofer differs from that of all the Achilidæ with which I am acquainted; it is compressed laterally and has a chitinous bar across the middle to which the base of the ædeagus is attached, thus allowing it movement around the point of attachment but not allowing it to be protruded. I know of no other fulgorid with this feature. In certain respects this type of genitalia approaches the type found in the Meenoplinæ of the Cixiidæ.

Type, *Achilixius singularis* sp. nov.

**Achilixius singularis** sp. nov. Plate 1, fig. 1.

*Male.*—Length, 2.7 millimeters; tegmen, 4. Brown; frons, vertex, and pronotum dull, with minute punctures, mesonotum shiny, with very few punctures; antennæ, lateral carinæ of frons, lateral portions of pronotum, legs, abdominal pleura, and pleural processes lighter brown or yellow. Tegmina brown, veins same color as membrane, except the apical veins, which are light, no tubercles or macrotrichæ; wings fuscous brown with dark veins.

Pygofer large, compressed laterally, opening longer than broad, lateral margins slightly angular in middle, no anal emargination, basal foramen comparatively small. Anal segment large, much longer than broad, subparallel sided, apex slightly angular in middle, the lateral angles projecting; dorsal surface flattened on basal two-thirds, rounded on apical third, anus at base, ventral surface concave. Genital styles long, slender, subspiniform, flattened slightly on basal third where there is a subquadrate process and a small curved spine on the outer margin. Ædeagus cultriform, the dorsal margin straight, broad, the ventral edge narrow and formed of two thin laminæ between which is the orifice. The bar across pygofer strong, arising from the angulation on the middle of lateral margins.

LUZON, Mountain Province, Baguio (*Baker*), 1 male. Type No. 1045.

**Achilixius tubulifer** (Melichar). Plate 1, figs. 2 and 3.

*Syntames tubulifer* MELICHAR, Philip. Journ. Sci. § D 9 (1914) 269, pl. 1, fig. 2; MUIR, Philip. Journ. Sci. § D 12 (1917) 59.

Male pygofer small, laterally compressed, margins entire, crossbar not very strong or chitinous. Anal segment short and broad, in dorsal view nearly round, with an obscure emargination at apex. Genital styles small and narrow, apex rounded, with the inner edge drawn out into a small point and a small projection on the outer corner. Ædeagus subcultrate, with the orifice down the ventral or anterior edge.

LUZON, Laguna Province, Los Baños, Mount Maquiling, and Mount Banahao (*Baker* and *Muir*), a number of specimens.

**Achilixius sandakanensis** sp. nov. Plate 1, fig. 4.

*Male.*—Length, 2 millimeters; tegmen, 3. In coloration this species is similar to *A. singularis,* but the general color is darker and the legs are marked with obscure fuscous bands.

Pygofer larger than in *A. tubulifer,* the ventral edge produced roundly, the crossbar nearer to the anal segment than in *A. singularis,* lateral margins entire or very slightly sinuous. Anal segment large, anus about one-third from base, in dorsal view much longer than broad, apex rounded. Genital styles flat and broad, subequal in width throughout, apex rounded with a strong, slightly curved spine on the inner surface, on the outer margin near apex slightly rounded. Ædeagus strong, chitinous, subcultrate with the base, wide and curved upward nearly at a right angle; apex acute, produced into two fine points; orifice along ventral margin.

*Female.*—Length, 2.2 millimeters; tegmen, 3. In color similar to male.

BORNEO, Sandakan (*Baker 10172*), 5 males and 2 females. Type No. 1046.

**Achilixius davaoensis** sp. nov. Plate 1, fig. 5.

*Male.*—Length, 2.3 millimeters; tegmen, 3.5. In coloration similar to *A. singularis,* but the light color at apex of veins not so distinct.

Pygofer much longer ventrally than dorsally, margin entire, ventral edge straight, not produced. Anal segment fairly large, longer than broad; apex rounded, with a minute emargination in middle. Genital styles flat, width subequal to apex which is rounded; on the dorsal margin near apex there is a small, flattened, slightly curved, pointed projection. Crossbar nearer the anal segment than in *A. singularis*. Ædeagus formed of a single plate, or keel, on ventral half and of two rounded flanges on dorsal half, in profile the dorsal flanges project slightly beyond apex and are rounded in outline, the ventral edge nearly straight to apex which is curved, the base projects dorsad and laterad where it is attached to the crossbar; the orifice appears to be on the dorsal aspect between the flanges.

MINDANAO, Davao (*Baker*), 2 males and 2 females. Type No. 1047.

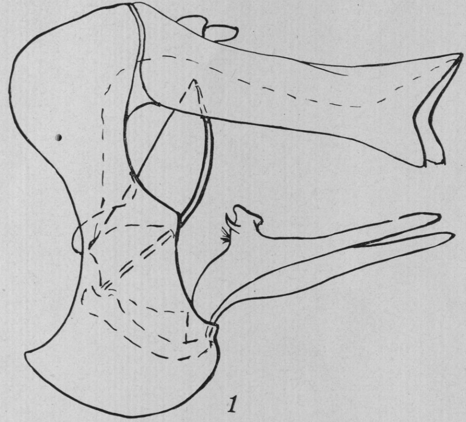
The types have been deposited in the collection of the Hawaiian Sugar Planters' Experiment Station and bear their type numbers; paratypes are retained in the Baker collection.

# ILLUSTRATION

## PLATE 1

FIG. 1. *Achilixius singularis* sp. nov.; pygofer, lateral view.

2. *Achilixius tubulifer* (Melichar); pygofer, lateral view.
3. *Achilixius tubulifer* (Melichar); left tegmen.
4. *Achilixius sandakanensis* sp. nov.; *a*, pygofer and anal segment, lateral view; *b*, ædeagus and genital styles, lateral view.
5. *Achilixius davaoensis* sp. nov.; ædeagus and left genital style, lateral view.



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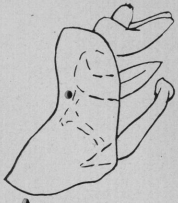

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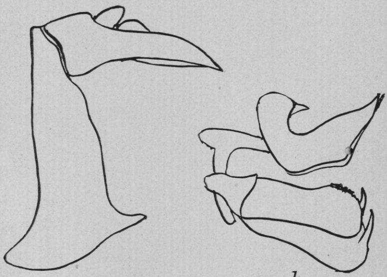
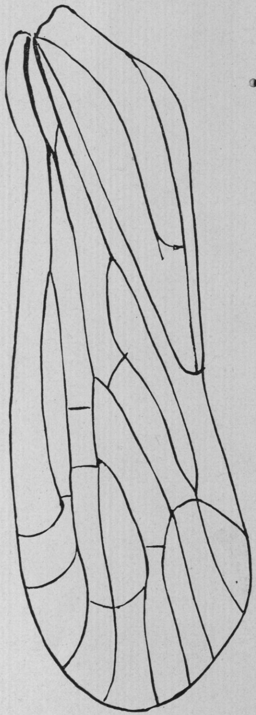


a

b

4



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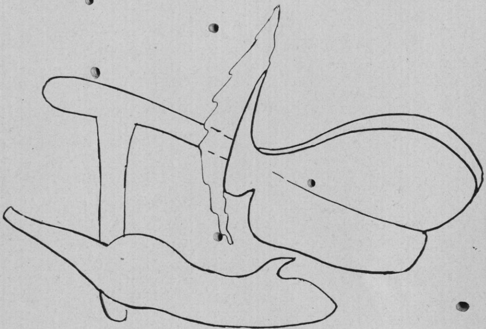

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PLATE 1.

# INDO-MALAYISCHE RHYNCHITINEN (CURCULIONIDÆ)

## II, ZEHNTER BEITRAG ZUR KENNTNISS DER CURCULIONIDEN

Von EDUARD VOSS

*Waldsiedlung Spandau, Germany*

## Genus **RHYNCHITES** Schneider

*Uebersicht der Untergattungen.*

- *$a^1$*. Russel kräftig, kurz und gedrungen, kaum länger als das Halsschild; Augen kleiner als der Rüssel an seiner schmalsten Stelle; Flügeldecken meist länglich, gestreckt.......... **Lasiorhynchidius** subg. nov.
- *$a^2$*. Rüssel länger, schlank; Flügeldecken selten gestreckt: dann ist der Rüssel lang.
  - *$b^1$*. Stirn zwischen den Augen breiter als der Rüssel vor der Basis; Augen klein und kräftig vorgewölbt.
    - *$c^1$*. Tibien normal, schlank, zur Spitze wenig verbreitert; Hintertibien höchstens mit dünnem, geradem Dornfortsatz. **Auletomorphus** subg. nov.
    - *$c^2$*. Tibien anormal, gedrungen, und zur Spitze stark verbreitert; Hintertibien mit breitem Fortsatz. Körper gestreckt. **Piazorhynchites** subg. nov.
  - *$b^2$*. Stirn so breit wie der Rüssel an der Basis; Augen mässig oder garnicht vorgewölbt. Das zweite Geisselglied nicht länger als das Schaft- und erste Geisselglied zusammen.
    - *$d^1$*. Augen vorgewölbt .......... **Involvulus** Seidlitz.
    - *$d^2$*. Augen Kaum aus der Kopfwölbung vortretend. **Metarhynchites** subg. nov.

### Subgenus **Lasiorhynchidius** novum

**Rhynchites curtirostris** sp. nov.

Kopf breit und plump, fast quadratisch; Schläfen parallel; Punktierung fein, zerstreut auf dem Scheitel, nach hinten zu dichter. Stirn doppelt so breit als der Rüssel an seiner schmalsten, Stelle. Rüssel kaum länger als das Halsschild, auf der Spitzenhälfte oben glatt; vor der Basis mit zwei breiten am Grunde runzlig punktierten Längsgruben, welche die Stirn mit angreifen, sie werden durch einen Mittelkiel getrennt. Fühler kurz hinter der Rüsselmitte eingelenkt. Schaftglied unbedeutend kürzer als das erste Geisselglied, letzteres doppelt so lang wie breit; das zweite und dritte Glied am längsten, etwas länger als das erste Glied. Keule kräftig, das erste Glied derselben nicht ganz so lang wie das sechste und siebente Geisselglied zusammen; das zweite Glied wenig kürzer; das dritte Glied am kürzesten, gut anderthalbmal so lang wie breit. Halsschild so lang wie breit, fein gerunzelt, seitlich nur sehr schwach und gleichmässig gerundet, die grösste Breite liegt hinter der Mitte. Flügeldecken seitlich fast parallel, hinter den Schultern seitlich etwas eingezogen, fast doppelt so lang wie breit. Punktstreifen mässig kräftig, die Punkte stehen etwas entfernt. Der verkürzte Seitenstreifen vereinigt sich erst kurz vor der Spitze mit dem Randstreifen. Zwischenräume so breit wie die Streifen und sehr fein punktiert. Alle Tibien grade. Mittel- und Hintertibien kurz und gedrungen, Vordertibien schlanker und länger.

Färbung gelbbräunlich, Fühler und Beine rotgelb. Unterseite schwarzbraun; Keule, Tarsenspitzen, sowie die Naht der Decken schwarz. Behaarung sehr kurz, anliegend mit untermischten, längeren, aufstehenden Haaren. Länge, 4 Millimeter.

MINDANAO, Dapitan (*Baker*), 1 Exemplar.

**Rhynchites dapitanus** sp. nov.

Kopf länger als breit; nur äusserst fein und zerstreut punktiert; Augen stark vorgequollen. Stirn zwischen den Augen breiter als der Rüssel vor der Basis. Dieser beim Männchen kürzer, beim Weibchen so lang wie das Halsschild; Basalhälfte mehr oder weniger längsgekielt. Fühler des Männchens kurz hinter, des Weibchens in der Mitte des Rüssels eingelenkt. Männchen: Schaft- und erstes Geisselglied länglich oval, länger als breit, ersteres etwas kräftiger und länger als das letztere; das zweite und dritte Glied etwas länger, gleichlang, und wie die nachfolgenden Glieder verkehrt kegelförmig; das vierte bis siebente Glied so lang wie das erste. Keule kräftig; das erste Glied fast so lang wie die drei letzten Geisselglieder zusammen. Weibchen: Fühler viel kräftiger und gedrungener, das siebente Geisselglied fast quer. Halsschild etwas breiter als lang, seitlich schwach gerundet, zum Vorderrand etwas mehr verschmälert als zur Basis. Punktierung sehr fein und wenig dicht, hinten undeutlich verrunzelt. Flügeldecken des Männchens fast doppelt so lang wie breit, des Weibchens kürzer; seitlich fast parallel. Punktstreifen sehr kräftig, die Punkte stehen sehr dicht. Zwischenräume hinter der Basis sehr schmal, nach hinten zu breiter werdend. Der verkürzte Seitenstreifen vereinigt sich mit dem Randstreifen kurz hinter der Mitte.

Färbung rotgelb; beim Weibchen sind die Fühler stärker gebräunt. Behaarung doppelt, sehr kurz, kaum aufstehend und ziemlich dicht, lang abstehend. Länge, 3 bis 4 Millimeter.

MINDANAO, Dapitan (*Baker*), ein Pärchen.

**Rhynchites griseipilosus** sp. nov.

Kopf fein und nicht dicht punktiert, eine seichte Abschnürung ist festzustellen. Augen mässig stark vorgewölbt. Rüssel so lang wie das Halsschild, kräftig, plump, schwach gebogen; auf der Basalhälfte nur stumpf gekielt, im übrigen kräftig und dicht punktiert. Fühler beim Männchen etwas vor, beim Weibchen in der Rüsselmitte eingefügt. Männchen: Schaftglied sehr kurz, kaum so lang wie breit; das erste Geisselglied gut doppelt so lang wie das Schaftglied; das zweite Geisselglied verkehrt kegelförmig und so lang wie das erste Glied; das dritte bis fünfte Glied kürzer; das sechste Glied deutlich länger als breit; das siebente Glied stärker rundlich. Das erste Glied der Keule wenig länger als breit; das zweite Glied so lang wie breit; das dritte Glied schwächer und zugespitzt. Weibchen: Schaft- und erstes Geisselglied gleichlang, länger als breit; das zweite Glied wenig länger als das erste; das dritte und vierte Glied so lang wie das erste Glied. Halsschild etwas breiter als lang, seitlich schwach gerundet, am Vorderrand viel schmaler als an der Basis; wenig kräftig und dicht punktiert. Flügeldecken gut ein-und-ein viertelmal so lang wie breit, seitlich parallel. Punktstreifen mässig stark, Zwischenräume etwas breiter als die Streifen, sehr dicht unregelmässig punktiert. Der verkürzte Seitenstreifen vereinigt sich mit dem Randstreifen in der Mitte der Decken. Vordertibien schmaler und länger als die Mittel- und Hintertibien.

Färbung schwarz, Oberseite bläulich; Kopf bei einem Exemplar erzglänzend. Behaarung der Oberseite dicht greis und lang abstehend. Unterseite mit Ausnahme des weniger dicht behaarten Abdomens dicht anliegend greis behaart, die Behaarung den Untergrund verdeckend. Länge, 3.5 bis 3.8 Millimeter.

BORNEO, Sandakan (*Baker 13934*), ein Pärchen.

## Subgenus **Auletomorphus** novum

**Rhynchites isabellinus** sp. nov.

Kopf breiter als lang; glatt, glänzend, mit feinen zerstreuten Punkten besetzt; jeder Punkt trägt ein senkrecht aufstehendes Härchen. Augen vorgewölbt. Rüssel schwach gebogen, an der Spitze etwas verbreitert; beim Männchen ein wenig länger als Kopf und Halsschild zusammen, beim Weibchen erheblich länger; im übrigen walzenrund, glänzend, ziemlich fein, teilweise reihig punktiert. Fühler im basalen Viertel bis Fünftel eingelenkt; Rüssel hier schwach knotig verdickt und doppelt gefurcht. Schaftglied keulenförmig und etwas länger als das erste Geisselglied; das zweite bis vierte Glied gleichlang und ein wenig kürzer als das erste Glied; das fünfte Glied wiederum etwas kürzer und wohl zweimal so lang wie breit; das sechste und siebente Glied kräftig, jedoch noch länger als breit. Keule lose gegliedert, die einzelnen Glieder spindelförmig und etwa dreimal so lang wie breit. Halsschild kaum kürzer als breit, glänzend, manchmal fein quergerunzelt und fein zerstreut punktiert. Seitlich gleichmässig gerundet, zur Spitze schwach verengt und hier etwas kräftiger ringförmig eingeschnürt als vor der Basis. Auf der Scheibe befindet sich ein linienförmiger Längsriss. Basalkante nicht ganz grade abgeschnitten, sondern zum Schildchen etwas vorgezogen. Flügeldecken wohl anderthalbmal so lang wie breit; seitlich parallel; Schulterbeule wenig ausgeprägt. Punktstreifen kräftig, Punkte nicht isoliert stehend. Zwischenräume breiter als die Punktstreifen und fein punktiert. Schenkel oben mit sehr feinen, schwarzen Höckerchen reihig besetzt; Klauen gespalten.

Behaarung gelblich greis, ziemlich lang abstehend. Färbung rötlich gelb. Rüssel (mit Ausnahme der Basis) und Fühler (mit Ausnahme manchmal der Spitzen der Geisselglieder) schwarzbraun bis schwarz, Tibien und Tarsen teilweise gebräunt. Länge, 5.5 Millimeter.

LUZON, Provinz Laguna, Los Baños; Mount Maquiling (*Baker 2464*), 2 Männchen, 1 Weibchen.

**Rhynchites latiusculus** sp. nov.

Kopf quer, ziemlich fein und entfernt stehend punktiert; Schläfen länger als die Augen, gerundet. Augen ziemlich klein und kräftig vorgewölbt, von der Seite gesehen treten sie etwas über den Kopf nach oben hinaus. Rüssel lang und schlank, länger als Kopf und Halsschild zusammen, schwach gebogen, rund; an der Basis mit zwei Längsfurchen, kräftigem Mittelkiel, und schwächeren Seitenkielen versehen; im übrigen glänzend, fein längspunktiert. Fühler hinter der Rüsselmitte eingelenkt, doch nicht ganz im basalen Drittel. Schaftglied schlank, verkehrt kegelförmig, so lang wie der Rüssel an der Einlenkungsstelle. Das erste Geisselglied länglich oval, halb so lang wie das Schaftglied; das zweite Glied wenig länger als das erste; das dritte bis fünfte Glied gleichlang, fast anderthalbmal so lang wie das erste Glied; das sechste Glied kaum länger als das zweite Glied; das siebente Glied so lang wie das erste. Keule kräftig, das mittlere Glied etwas länger als die einschliessenden. Halsschild etwas breiter als lang, nicht stark und wenig dicht, lediglich vor der Basis kräftiger und dichter punktiert. Seitlich mässig stark gerundet, hinter der Mitte am breitesten, an der Basis fein gerundet, und vor dem Vorderrand etwas eingezogen. Flügeldecken nicht ganz doppelt so lang wie breit, seitlich parallel. Punkte der Streifen mässig stark und dicht. Zwischenräume etwas breiter als die Punktstreifen, schwach gewölbt, und sehr fein punktiert.

Färbung rötlich braun; Spitzenhälfte des Rüssels schwarz, Keule geschwärzt. Behaarung der Decken fein, kurz, und fast anliegend, des Halsschilds und Kopfes aufgerichtet, namentlich auf dem Kopf auch länger. Unterseite spärlich behaart. Länge, 5 Millimeter.

MINDANAO, Zamboanga (*Baker*), 1 Exemplar.

**Rhynchites gracilirostris** sp. nov.

Kopf quer, gewölbt, glänzend; nur sehr fein und zerstreut punktiert; Stirn zwischen den Augen doppelt so breit wie der Rüssel. Augen klein, ziemlich kräftig vorgewölbt. Stirn zum Rüssel abfallend, und auch die Augen der Unterseite des Kopfes stark genähert. Rüssel lang und schlank, gleichmässig gebogen, länger als Kopf und Halsschild zusammen, glänzend, vor der Basis fein gekielt, an der Spitze mässig verbreitert. Fühlerfurche nur sehr kurz, kaum so lang wie das Schaftglied. Fühler im basalen Drittel eingelenkt, sehr schlank. Schaftglied lang, länger als der Rüssel stark; das erste Geisselglied viel kürzer, kaum die Hälfte der Länge des Schaftglieds, fast dreimal so lang wie breit; das zweite Geisselglied, wie die nachfolgenden verkehrt kegelförmig, so lang wie das erste; das dritte Glied fast so lang wie das Schaftglied; das vierte und fünfte Glied gleichlang, kürzer als das dritte Glied und länger als das erste und zweite Glied; das sechste und siebente Glied etwas kräftiger, ersteres so lang wie das erste Geisselglied, letzteres ein wenig kürzer, aber doppelt so lang wie breit. Keule kräftig, verhältnissmässig gedrungen, die Glieder ungefähr gleichlang, länger als breit. Halsschild breiter als lang, seitlich schwach gerundet, zum Vorderrand etwas mehr als zur Basis verschmälert, an letzterer fein gerandet. Punktierung wenig kräftig, verrunzelt. Scheibe mit feiner Mittellinie. Flügeldecken anderthalbmal so lang wie breit, parallelseitig. Punktstreifen mässig kräftig, Zwischenräume viel breiter und dicht unregelmässig punktiert.

Färbung rotgelb. Rüssel und Fühler, der grösste, hintere Teil der Flügeldecken schwarz, auch die Spitze der Tibien und Tarsen mehr oder weniger geschwärzt. Behaarung gelblich, anliegend, dazwischen stehen weniger lange Haare senkreckt auf. Länge, 3.6 Millimeter.

BORNEO, Sandakan (*Baker*), 1 Exemplar.

**Rhynchites cupido** Pascoe.

PENANG (*Baker*), 1 Exemplar.

**Rhynchites pilifer** sp. nov.

Kopf breiter als lang, glänzend, unpunktiert. Augen klein und weniger kräftig vorgewölbt. Stirn zwischen den Augen mehr als doppelt so breit wie der Rüssel; Kopf vor den Augen konisch zum Rüssel verschmälert. Rüssel lang, viel länger als Kopf und Halsschild zusammen, wenig und gleichmässig gebogen; walzenrund, kurz vor der Spitze verbreitert; schwach glänzend, wenig deutlich punktiert. Basis schwach gekielt und seitlich jederseits mit am Grunde mattierten, seichten Furchen versehen. Fühler kurz vor der Basis eingelenkt. Fühlerfurchen sehr flach und kurz. Schaftglied lang, schwach keulenförmig, so lang wie der Rüssel an der Einlenkungsstelle dick. Das erste Geisselglied fast so lang wie das Schaftglied; das zweite Glied erheblich kürzer; das dritte bis fünfte Glied gleichlang, wenig kürzer als das zweite Glied; das sechste Glied wiederum etwas kürzer; das siebente Glied noch deutlich länger als breit. Keule kräftig, die Glieder gleichlang und jedes so lang wie die zwei letzten Geisselglieder zusammen. Halsschild breiter als lang, seitlich ziemlich gleichmässig gerundet; am Vorderrand etwas schmaler als an der seicht eingeschnürten und fein gerandeten Basis. Punktierung in etwas entfernt stehende Risse verlaufend. Flügeldecken nicht ganz anderthalb mal so lang wie breit, parallelseitig. Punktfurchen mässig stark. Zwischenräume gewölbt und kaum breiter als die Streifen, dicht punktiert.

Färbung dunkelbraun; Oberseite mit Purpurglanz. Behaarung greis, schuppenförmig, anliegend. Die Haare sind schwach gebogen und auf den Decken reihig geordnet. Auf der Unterseite sind die Epimeren der Mittelbrust und das Epistom der Hinterbrust dicht anliegend abstechend behaart. Länge, 6.2 Millimeter.

MINDANAO, Provinz Agusan, Butuan (*Baker*), 1 Exemplar.

**Rhynchites infuscatus** sp. nov.

Kopf breiter als lang, glänzend; sehr fein und wenig dicht punktiert. Augen mässig gross und ziemlich kräftig vorgewölbt. Rüssel so lang wie Kopf und Halsschild zusammen; grade, walzenrund, von der Basis zur Mitte sich verengend, und zur Spitze in gleicherweise sich wieder erweiternd; schwach glänzend, fein punktiert, an der Basis mit Mittelkiel. Fühler im basalen Viertel eingelenkt. Schaftglied halb so lang wie der Rüssel an der Einlenkungsstelle dick. Das erste Geisselglied länglich oval und etwas kürzer als das Schaftglied; das zweite Glied wie die Nächsten verkehrt kegelförmig, etwas kürzer als das erste; das dritte und vierte Glied so lang wie das erste; das fünfte und sechste Glied so lang wie das zweite Glied; das siebente Glied so lang wie breit; die letzten Glieder breiter als die ersten. Keule kräftig, das erste Glied derselben fast so lang wie die letzten drei Geisselglieder zusammen; das zweite Glied wenig, das dritte Glied etwas stärker gegenüber dem ersten verkürzt. Halsschild so lang wie breit, seitlich schwach und ziemlich gleichmässig gerundet; an der Basis etwas breiter als am Vorderrand, hier wie dort sehr seicht eingeschnürt. Punktierung fein, wenig dicht; in der Mitte querrunzlig. Flügeldecken nicht ganz anderthalbmal so lang wie breit; seitlich parallel. Punktfurchen ziemlich kräftig, Punkte jedoch nicht zusammenlaufend; Zwischenräume gewölbt, so breit wie die Streifen, dicht und fein punktiert. Mittel- und Hintertibien gedrungen, Vordertibien schlanker.

Färbung dunkel rotbraun; Basis der Schenkel, weniger die Tibien und Tarsen etwas aufgehellt. Behaarung dünn, gelblich, anliegend; zwischendurch mit, aufstehenden Haaren besetzt. Auf der Unterseite sind die ganzen Epimeren der Mittelbrust, Basis der Hinterbrust, und das Epistom abstechend weiss behaart. Länge, 4.8 Millimeter.

BORNEO, Sandakan (*Baker*), 1 Exemplar.

**Rhynchites pectoralis** sp. nov.

Kopf breiter als lang, glänzend; äusserst fein und wenig dicht punktiert. Augen klein, kräftig vorgewölbt; Schläfen seitlich gleichmässig gerundet, fast so lang wie der Augenlängsdurchmesser. Rüssel kräftig, grade, etwas länger als Kopf und Halsschild zusammen, zur Spitze wenig und allmählich verbreitert, im übrigen walzenrund; an der Basis besteht Neigung zur Kielbildung. Punktierung nur sehr fein, zerstreut; zur

Basis etwas kräftiger und dichter. Fühler unweit der Basis eingelenkt; Fühlerfurche sehr kurz und flach. Schaftglied kräftiger als die nächsten Glieder, keulenförmig, etwa dreimal so lang wie breit; das erste bis vierte Geisselglied gleichlang, etwas kürzer als das Schaftglied; das erste Glied länglich oval, die nachfolgenden verkehrt kegelförmig; das fünfte und sechste Glied etwas kürzer, untereinander von gleicher Länge; das siebente Glied noch etwas länger als breit. Keule kräftig, das erste Glied nicht ganz so lang wie die letzten drei Geisselglieder; das zweite Glied etwas kürzer; das dritte Glied am kürzesten. Halsschild breiter als lang, seitlich gerundet, und hinter der Mitte am breitesten, von dort zum Vorderrand ziemlich kräftig verengt; Basis schwach eingeschnürt, Vorderrand nur undeutlich. Punktierung sehr fein und dicht. Auf der Scheibe vor der Basis mit leichtem Eindruck. Flügeldecken länger als breit; seitlich fast parallel, hinter den Schultern leicht eingezogen. Punktstreifen sehr stark und tief; Zwischenräume gewölbt und so breit wie die Streifen, fein und dicht punktiert. Vorletzter Streifen vereinigt sich wie bei den vorhergehenden Arten in der Mitte der Decken. Tibien schlank; Mitteltibien schwach einwärts gebogen.

Färbung rot; Rüsselspitze gebräunt. Behaarung der Oberseite kurz, anliegend. Auf der Unterseite sind die Epimeren der Mittel- und Hinterbrust dicht anliegend greis behaart. Im übrigen its die Unterseite einschliesslich der Beine nur äusserst fein anliegend behaart. Länge, 7.5 Millimeter.

BORNEO, Sandakan (*Baker*), 1 Exemplar.

### Subgenus **Piazorhynchites** novum

**Rhynchites pedestris** sp. nov.

Kopf etwas breiter als lang, fein und dicht punktiert. Augen kräftig gewölbt. Stirn zwischen den Augen etwas breiter als der Rüssel vor der Basis. Rüssel so lang wie Kopf und Halsschild zusammen, fast grade, walzenrund, vor der Basis schwach gekielt; fein und wenig dicht punktiert, schwach glänzend. Fühler kurz vor der Basis eingelenkt. Fühlerfurche kurz, länglich. Schaftglied etwa halb so lang wie der Rüssel an der Einlenkungsstelle dick; das erste Geisselglied so lang wie das Schaftglied; das zweite Glied kürzer; das dritte und vierte Glied so lang wie das erste; das fünfte Glied so lang wie das zweite; das sechste und siebente Glied etwas kürzer, doch noch länger als breit. Keule kräftig; das erste Glied etwas länger als die zwei letzten Geisselglieder;

das zweite Glied etwas kürzer; das dritte Glied wiederum kürzer und erheblich schwächer. Halsschild so lang wie breit, seitlich mässig gerundet, die grösste Breite liegt etwas hinter der Mitte; zum Vorderrand etwas mehr verengt als zur Basis. Punktierung mässig kräftig, querrunzlig. Flügeldecken fast doppelt so lang wie breit, seitlich parallel, oben wenig gewölbt. Punktstreifen kräftig, Punkte schmal getrennt. Zwischenräume hinten breiter als die Streifen, zur Basis hin sehr schmal. Tibien gedrungen und sehr stark zur Spitze verbreitert. Hintere Tibien aussen mit kräftigem, breitem, an der Spitze abgerundetem Fortsatz versehen.

Färbung dunkelbraun; Fühler rotbraun, Pygidium gelbrot. Behaarung kräftig, gelb, anliegend; auf den Decken ziemlich regelmässig fleckig verteilt, in den Flecken bis auf die der Naht quer gestellt. Unterseite, besonders die Seitenteile der Mittel- und Hinterbrust dichter gelb behaart. Länge, 6.6 Millimeter.

BORNEO, Sandakan (*Baker 12911*), 1 Exemplar.

### Subgenus **Involvulus** Seidlitz

**Rhynchites spadiceus** sp. nov.

Kopf breiter als lang, glänzend, mit feinen zerstreuten Punkten besetzt, in welchen sich je ein schwarzes, aufstehendes Härchen befindet. Die Stirn trägt eine flache Grube. Rüssel schlank, gebogen; beim Männchen so lang wie Kopf und Halsschild zusammen, beim Weibchen länger. An der Basis stumpf gekielt und beiderseits schwach gefurcht, an der Fühlereinlenkungsstelle schwach knotig verstärkt, und auf dem Rücken mit einer Längsgrube versehen; glänzend und nur fein punktiert. Fühlerschaft etwa so lang wie das erste und zweite Geisselglied zusammen. Geisselglieder auffallend schlank und lang gestreckt. Halsschild so lang wie breit, zur Spitze schwach gerundet verengt, fein und zerstreut punktiert, glänzend und mehr oder weniger flach runzlig. Flügeldecken länger als breit, nach hinten zu kaum merklich verschmälert. Punktstreifen ziemlich kräftig, die Punkte stehen um die Grösse ihres Durchmessers oder mehr von einander isoliert; auch die Zwischenräume breiter als die Streifen, fein und dicht unregelmässig punktiert. Ein Skutellarstreifen fehlt (wie bei allen *Involvulus*-Arten).

Färbung rotgelb bis bräunlich; Rüssel, die letzten Geisselglieder, und die Keule, manchmal auch die stets angedunkelten Tarsen und teilweise die Schienen schwarz. Behaarung fein, gelblich, fast anliegend; auf den Flügeldecken mehr oder weniger quer gelagert; dazwischen längere aufstehende Haare. Länge, 4 bis 5 Millimeter.

LUZON, Mount Banahao (*Baker*), 1 Männchen, 2 Weibchen. PALAWAN, Puerto Princesa (*Baker 5940*).

**Rhynchites antennalis** sp. nov.

Kopf quer, hinter den Augen undeutlich eingeschnürt, fein und entfernt stehend punktiert. Augen kräftig vorgewölbt, der Längsdurchmesser etwas grösser als der Rüssel vor der Basis; Stirn kaum so breit wie der Rüssel, seicht längsgefurcht. Rüssel fast so lang wie Kopf und Halsschild zusammen, leicht gebogen; auf der Basalhälfte mit Mittelkiel, seitlich gefurcht, vorn glatt und nur schwach längspunktiert, auch hier an den Seiten gefurcht. Fühler wenig hinter der Mitte des Rüssels eingelenkt; das erste Geisselglied mehr als doppelt so lang wie breit und etwas länger als das Schaftglied; das zweite bis vierte Glied gleichlang, kaum kürzer als das Schaftglied; das fünfte Glied länger als breit; das sechste und siebente Glied so lang wie breit. Keule sehr lang und kräftig, länger als die Geissel; das erste und zweite Glied gleichlang, das dritte Glied erheblich kürzer. Halsschild so lang wie breit, seitlich schwach gerundet, nach vorn mehr verschmälert als zur Basis. Punktierung fein und zerstreut. Flügeldecken nicht ganz anderthalbmal so lang wie breit, fast parallelseitig, hinten wenig breiter als an der Basis, hinter dem Schildchen eingedrückt. Punktstreifen mässig stark, Zwischenräume breiter als die Streifen, einreihig punktiert. Die Seiten der Hinterbrust, des Halsschilds, sowie die Seitenteile der Hinterbrust kräftig und dicht punktiert. Abdomen nur sehr fein, undeutlich punktiert.

Färbung rötlichbraun; Rüsselspitze und Keule schwarz. Behaarung doppelt; sehr lang, abstehend und kürzer, geneigt; gelblich. Länge, 2.8 Millimeter.

BORNEO, Sandakan (*Baker 13945*), 1 Tier.

**Rhynchites nigriclavatus** sp. nov.

Kopf quer; mässig stark und sehr dicht punktiert. Augen kräftig vorgewölbt. Rüssel kaum so lang wie Kopf und Halsschild zusammen, kräftig, wenig gebogen; Basis mit schwachem Mittelkiel; die Seiten ziemlich kräftig und dicht reihig punktiert, im übrigen etwas rauh skulptiert. Fühler hinter der Rüsselmitte eingelenkt; Schaftglied etwa halb so lang wie der Rüssel an der Einlenkungsstelle dick; das erste Geisselglied so stark und so lang wie das Schaftglied, länglich oval, fast walzenförmig.

Die nächsten Geisselglieder verkehrt kegelförmig, die drei letzten erheblich kräftiger als die voraufgehenden Glieder; das zweite bis vierte Glied so lang wie das erste Geisselglied; die nächsten an Länge allmählich abnehmend, das siebente Glied kaum länger als breit. Keule sehr kräftig, die beiden ersten Glieder dreieckig, viel länger als breit; das letzte Glied etwas kürzer als 1 und 2. Halsschild etwa so lang wie breit, fein und nicht ganz dicht punktiert. Seitlich mässig gerundet, hinter der Mitte am breitesten; Basis fein gerandet. Flügeldecken gut anderthalbmal so lang wie breit, seitlich parallel. Punktstreifen lediglich zur Basis hin kräftiger, hinten fast erloschen. Zwischenräume breit, viel breiter als die Streifen. Der vorletzte Punktstreifen vereinigt sich mit dem Randstreifen vor der Mitte der Decken, in der Höhe der Hinterhüften; er ist fast grade, kaum geschweift. Zwischenräume nur sehr fein punktiert. Das Pygidium ist bei dem einzigen mir vorliegenden Tier fast von den Decken bedeckt, ohne dass sich jedoch feststellen lässt ob dieser Umstand von grundlegender Bedeuting ist.

Färbung rotgelb; Rüsselspitze, Keule, und die beiden letzten Geisselglieder schwarz. Behaarung der Decken fast anliegend, gelblich; dazwischen mit länger aufstehenden Haaren durchsetzt. Unterseite sparsam anliegend behaart. Länge, 3.6 Millimeter.

BORNEO, Sandakan (*Baker*), 1 Stück.

**Rhynchites pallidipennis** sp. nov.

Kopf quer, fein und zerstreut punktiert. Augen ziemlich gross und mässig vorgewölbt. Rüssel etwas länger als Kopf und Halsschild zusammen, vor der Basis mit kräftigem Mittelkiel, seitlich desselben schwach gefurcht; auf der Spitzenhälfte fein und dicht punktiert, an der Spitze verbreitert. Fühler kurz hinter der Mitte unter einer Verstärkung des Rüssels eingelenkt. Schaftglied halb so lang wie der Rüssel an der Einlenkungsstelle dick ist, etwa doppelt so lang wie breit; das erste bis vierte Geisselglied so lang wie das Schaftglied, das erste länglich oval, die übrigen verkehrt kegelförmig; das fünfte Glied unerheblich kürzer; das sechste Glied kräftiger und etwas kürzer als das fünfte Glied; das siebente Glied so lang wie breit. Keule kräftig, Glied 1 und 2 so lang wie breit, ersteres aber etwas kräftiger. Halsschild so lang wie breit, seitlich gleichmässig gerundet, am Vorderrand kaum schmaler als an der Basis, an ersterem etwas eingezogen, an letzterem fein gerandet. Punktierung fein und dicht runzlig. Flügeldecken anderthalbmal so lang wie breit. Punktstreifen mässig stark, Punkte nicht dicht. Zwischenräume sehr schmal, teilweise schwach rippenförmig erscheinend. Zwischen den Punkten der Streifen befinden sich noch feinere, dicht angeordnete Punkte. Abdomen sehr fein und zerstreut punktiert.

Färbung rötlich gelb; Spitzenhälfte des Rüssels, die Fühler, Tibien, und Tarsen schwarz. Behaarung kurz und wenig aufgerichtet, mit einzelnen aufstehenden längeren Haaren untermischt. Unterseite spärlich behaart. Länge, 4 Millimeter.

BASILAN (*Baker*), 1 Tier.

**Rhynchites pectitus** sp. nov.

Kopf fein und nicht dicht punktiert. Augen beim Weibchen wenig, beim Männchen mehr vorgewölbt. Stirn des Weibchens viel breiter als der Rüssel an seiner schmalsten Stelle (bei *R. balneator,* dem diese Art sehr nahe steht, weniger breit). Rüssel länger als Kopf und Halsschild zusammen, beim Männchen etwas kürzer, kräftiger, und kaum gebogen, beim Weibchen mehr gebogen. Basalhälfte gekielt und beiderseits längsgefurcht; Spitzenhälfte längsfurchig punktiert. Fühler kurz hinter der Rüsselmitte eingelenkt. Weibchen: Schaft- und erstes Geisselglied gleichlang, dreimal so lang wie breit; das zweite Glied etwas länger als das erste; das dritte und vierte Glied kaum kürzer als das zweite Glied; das fünfte Glied kürzer als das vierte und kaum länger als das sechste; das siebente Glied noch länger als breit. Keule mässig kräftig, das erste Glied etwas länger als das zweite Glied, auch das letzte etwas länger als das zweite, letzteres aber noch länger als breit. Halsschild länger als breit, seitlich fast parallel, sehr fein und ziemlich dicht punktiert; auf der Mitte der Scheibe ist nur eine feine Mittelfurche angedeutet. Flügeldecken parallelseitig, gut anderthalbmal so lang wie breit. Punktfurchen weniger kräftig, flach; Zwischenräume schmaler als die Streifen, dicht und sehr fein punktiert. Der verkürzte Seitenstreifen vereinigt sich mit dem Randstreifen hinter der Mitte der Decken.

Färbung gelblich braun; Keule mit der Geissel gleichfarbig. Behaarung goldgelb, anliegend, untermischt mit kurzen, aufstehenden Härchen. Auf den Decken und dem Halsschild ist die Behaarung von der Mitte nach den Seiten quergekämmt. Länge, 3 bis 3.2 Millimeter.

LUZON, Provinz Mountain, Baguio (*Baker*), 1 Männchen. MINDANAO, Dapitan (*Baker*), 1 Weibchen.

Durch die goldgelbe seitwärts gerichtete Behaarung, feiner punktiertes Halsschild, nicht geschwärzter Naht, etc., von dem am nächsten stehenden *R. balneator* leicht zu trennen.

**Rhynchites weberi** sp. nov.

Kopf nicht ganz so lang wie breit; Augen nur mässig stark vorgewölbt, mässig kräftig und dicht punktiert. Rüssel des Männchens etwa so lang wie Kopf und Halsschild zusammen, der des Weibchens deutlich länger; schwach gebogen, Basalhälfte bis zur Fühlereinlenkung gekielt und beiderseits punktiert gefurcht; Apikalhälfte kräftig längsrunzlig punktiert. Fühler kurz hinter der Mitte des Rüssels eingelenkt. Schaft- und das erste bis fünfte Geisselglied gleichlang, gestreckt; Schaft- und erstes Geisselglied länglich oval, die übrigen verkehrt kegelförmig; Endglied zugespitzt und vom dritten nicht deutlich getrennt. Halsschild kaum kürzer als breit, seitlich zum Vorderrand schwach gerundet verengt, an der Basis nicht merklich eingezogen; mässig stark runzlig punktiert und mit fein angedeuteter Mittelfurche versehen. Flügeldecken länger als breit, parallel; Punktstreifen ziemlich kräftig, Punkte stehen isoliert und um mehr als ihren Durchmesser von einander entfernt; Zwischenräume breit, wohl dreimal so breit wie die Punkte gross sind. Sie sind zwei- bis dreireihig fein punktiert.

Färbung rotgelb; Rüssel schwarzbraun, Fühler schwarz; Tarsen angedunkelt; Seiten, Spitze, sowie die Naht der Decken schwarzbraun gefärbt. Behaarung auf Kopf, Halsschild, und Flügeldecken von zweifacher Art; eine kurze, gelblichgreise halbaufstehende untermischt mit längeren senkrecht abstehenden dunklen Porenhaaren, von denen eine Reihe in je einem Punkt stehend auch auf der Unterseite des Halsschildes, entlang dem Vorderrand angeordnet ist. Länge, 3.5 Millimeter.

MINDORO, Mangaren (*Bureau of Science 13431, 13443 C. M. Weber*), 4 Exemplare.

**Rhynchites balneator** sp. nov.

Diese Art steht der vorigen sehr nahe und unterscheidet sich von derselben im wesentlichen folgendermassen:

Die Skulptur der Flügeldecken ist eine andere. Zwischenräume kräftig gewölbt und kaum so breit wie die Punktstreifen. Die feinere Punktierung auf den Zwischenräumen ist verrunzelt und unscharf. Die Punkte der Streifen stehen nicht isoliert wie bei *R. weberi,* sie sind kräftiger und gehen in einander über.

Die feinere Behaarung ist anliegender und hinten auf der Spitzenhälfte der Flügeldecken scheitelartig quergelagert. Die mittleren Geisselglieder sind rotgelb gefärbt, die dunklere Färbung, die zum Teil auch auf die Unterseite sich erstreckt, während sie auf den Flügeldecken mehr zurücktritt, ist leicht erzglänzend. Auch das Schildchen ist bei dieser Art dunkelbraun gefärbt. Länge, 2.8 bis 3.5 Millimeter.

LUZON, Provinz Laguna, Los Baños, Mount Maquiling: Provinz Mountain, Baguio (*Baker 604, 5935*), 10 Exemplare.

**Rhynchites helleri** sp. nov.

Kopf quer, ziemlich kräftig und dicht punktiert. Augen mässig stark vorgewölbt, beim Weibchen der Längsdurchmesser etwas kleiner, beim Männchen grosser als der Rüssel vor der Basis. Beim Männchen ist er auf der Basalhälfte fast parallelseitig, beim Weibchen stärker zur Fühlereinlenkung verschmälert. Die Basalhälfte trägt einen Mittelkiel, der seitlich beiderseits von einer kräftigen Punktfurche begrenzt wird. Spitzenhälfte glatt und vereinzelt punktiert. Fühler wenig hinter der Rüsselmitte eingelenkt. Weibchen: Schaftglied ziemlich lang und gestreckt, länger als das erste Geisselglied; das zweite und dritte Glied gleichlang und wenig länger als das Schaftglied; das vierte Glied so lang wie das erste; das fünfte Glied etwas kürzer; das sechste und siebente Glied gleichlang und wiederum etwas kürzer. Keule kräftig und gedrungen; Glied 1 und 2 wenig länger als breit und so lang wie das schwächere dritte. Beim Männchen ist das Schaftglied nicht deutlich länger als das erste Geisselglied. Halsschild etwas länger als breit, seitlich schwach gerundet. Punktierung mässig stark, runzlig; Basis fein gerandet. Flügeldecken annähernd doppelt so lang wie breit, parallelseitig. Punktstreifen mässig kräftig, Zwischenräume so breit wie diese, gewölbt; fein und sehr dicht, etwas runzlig punktiert. Der abgekürzte Seitenstreifen vereinigt sich erst hinter der Mitte der Decken mit dem Randstreifen. Hinterbrust fein und dicht, Seitenteile etwas kräftiger punktiert, Abdomen fein verrunzelt. Vordertibien schlank und grade, Mitteltibien ziemlich kräftig einwärts gebogen. Hintertibien kielförmig zur Spitze verbreitert.

Färbung blau; Fühler, Tarsen, und Rüssel schwarz. Behaarung fein und kurz, wenig aufgerichtet, untermischt mit etwas längeren abstehenden schwarzen Haaren. Länge, 4 bis 5.2 Millimeter.

LUZON, Los Baños, Mount Banahao, Mount Maquiling. MINDANAO, Iligan (*Baker 2463, 935, 1395, 4428*), 7 Exemplare.

**Rhynchites plagiocephalus** sp. nov.

Kopf quer, mässig kräftig und mehr oder weniger dicht punktiert. Augen mässig vorgewölbt; beim Weibchen der Längsdurchmesser so gross wie der Rüssel vor der Basis dick, beim Männchen viel grösser. Rüssel des Männchens nur so lang wie das Halsschild, des Weibchens so lang wie Kopf und Halsschild zusammen, schwach gebogen. Basalhälfte mit Mittelkiel, seitlich punktiert, längsgefurcht; auch zwischen der Fühlereinlenkung mit länglicher Furche; Spitzenhälfte glatt, zerstreut punktiert. Fühler des Männchens in der Mitte, des Weibchens hinter der Mitte des Rüssels eingelenkt. Männchen: Schaft- und erstes bis drittes Geisselglied gleichlang, doch ist das Schaft- und das erste Geisselglied länglich oval und kräftiger als die übrigen verkehrt kegelförmigen Glieder; das vierte bis sechste Glied etwas kürzer, das siebente Glied noch länger als breit. Keule ziemlich schlank; das erste und zweite Glied gleichlang und jedes fast so lang wie die drei letzten Geisselglieder zusammen; das dritte Glied kürzer. Weibchen: Das zweite Geisselglied länger als das erste Glied; das vierte und fünfte Glied wenig länger als das sechste Glied. Halsschild länger als breit, seitlich schwach gerundet, zum Vorderrand mehr als zur Basis verschmälert; runzlig punktiert. Basis fein gerandet. Flügeldecken parallelseitig, gut anderthalbmal so lang wie breit. Punktstreifen mässig kräftig; Zwischenräume so breit wie diese, gewölbt und dicht, fein, schwach runzlig punktiert. Der verkürzte Seitenstreifen verbindet sich mit dem Randstreifen in der Höhe der Hinterhüften.

Färbung schwarz, Schenkel an der Basis hellgelb. Behaarung kurz, anliegend, dünn, mit einzelnen aufstehenden Härchen untermischt. Länge, 2.5 bis 3.5 Millimeter.

LUZON, Mount Maquiling: Nueva Vizcaya, Imugan: Benguet, Baguio. MINDANAO, Davao, Dapitan, Kolambugan. (*Baker 8388, 8392, 8393, 8389, 8381, 8390.*) LUZON, Isabela, Iligan (*Bureau of Science 9783 H. E. Stevens*): San Luis (*Bureau of Science 15467 C. R. Jones*).

Diese Art scheint recht variabel zu sein. Die Punktierung des Kopfes weicht ab, sie kann fein und zerstreut und kräftiger sehr dicht sein. Die Färbung der Schenkelbasis kann sich auf die ganzen Schenkel, Tibien, und Hüften erstrecken: forma nova *pallidipes*. Häufig ist das Abdomen rotbraun, bisweilen die

Unterseite des Kopfes und das ganze Halsschild: forma nova *rubricollaris*. Diese Form liegt mir namentlich von Palawan (*Boettcher* leg.) zahlreich vor. Bisweilen haben die Decken Bleiglanz, manchmal bläulichen und zuweilen erzfarbenen Schein.

**Rhynchites sandakanensis** sp. nov.

Kopf quer, fein und nicht ganz dicht punktiert. Augen ziemlich kräftig vorgewölbt, ihr Längsdurchmesser wenig kleiner als die Stirn breit und diese breiter als der Rüssel vor der Basis. Rüssel länger als Kopf und Halsschild zusammen, seicht gebogen. Basalhälfte mit Mittelkiel, der beiderseits von einer Längsfurche begrenzt wird; vorn glänzend und länglich punktiert. Fühler hinter der Rüsselmitte eingelenkt. Schaft- und die beiden ersten Geisselglieder gleichlang, gestreckt; das dritte und vierte Glied etwas kürzer; das siebente Glied noch etwas länger als breit. Glieder der Keule viel länger als breit, untereinander gleichlang. Halsschild so lang wie breit, ziemlich fein, runzlig punktiert; seitlich schwach und gleichmässig gerundet, am Vorderrand kaum schmaler als an der Basis. Flügeldecken anderthalbmal so lang wie breit, parallelseitig. Punktstreifen vorn kräftig, hinten feiner werdend; Zwischenräume hinten so breit wie die Streifen, fein und dicht punktiert. Der verkürzte Seitenstreifen verbindet sich mit dem Randstreifen in der Mitte der Decken.

Färbung schwarz; Kopf, Halsschild, und Abdomen rot; die Basis der Mittel- und Hinterschenkel, die Vorderschenkel unterseits gelb gefärbt. Behaarung gelblich, auf den Decken kurz anliegend untermischt mit längeren aufstehenden Härchen. Länge, 3.5 Millimeter.

BORNEO, Sandakan (*Baker*), 1 Exemplar.

**Rhynchites furtivus** sp. nov.

Kopf mässig stark und dicht punktiert; Augen mässig vorgewölbt, Stirn so breit wie der Rüssel vor der Basis. Rüssel kaum so lang wie Kopf und Halsschild zusammen, seicht gebogen; Basis mit schwachem Mittelkiel, im übrigen ziemlich kräftig punktiert, auf der Spitzenhälfte glatt. Fühler hinter der Rüsselmitte eingelenkt. Schaft- und erstes Geisselglied gleichlang, länger als breit; das zweite bis vierte Glied so lang wie das erste, das dritte Glied wenig kürzer; das fünfte bis siebente Glied noch deutlich länger als breit. Das erste Glied der Keule so lang wie breit, das zweite Glied quer. Halsschild breiter als lang, mässig stark und ziemlich dicht punktiert, eine schmale Längsfläche der Scheibe glänzend und punktfrei. Seitlich schwach gerundet, konisch zum Vorderrand verschmälert. Flügeldecken parallelseitig, ein-und-ein-viertelmal so lang wie breit. Punktfurchen mässig kräftig, Zwischenräume etwas breiter als die Streifen, schwach gewölbt, sehr fein und nicht dicht punktiert.

Färbung schwarz mit Bleiglanz. Behaarung fast anliegend, ziemlich dicht. Die Brust mit Seitenteilen dichter anliegend weiss behaart, Abdomen etwas weniger dicht. Länge, 3 Millimeter.

LUZON, Provinz Laguna, Los Baños (*Bakor*). BASILAN (*Baker*), 2 Tiere.

**Rhynchites rugiceps** sp. nov.

Kopf runzlig punktiert. Augen kräftig vorgewölbt, den Vorderrand des Halsschilds berührend. Augenlängsdurchmesser grösser als der Rüssel vor der Basis breit. Rüssel schlank, gebogen, länger als Kopf und Halsschild zusammen; Basis mit Mittelkiel und beiderseits desselben mit Längsfurche. Spitzenhälfte glänzend und jederseits mit einer Reihe länglicher Punkte besetzt. Fühler hinter der Rüsselmitte fast im basalen Drittel eingelenkt. Schaft- und erstes Geisselglied gleichlang, länglich oval; das zweite und dritte Glied kaum kürzer, die nächsten Glieder etwas kürzer aber länger als breit. Das erste Glied der Keule länger als breit, das zweite Glied so lang wie breit. Halsschild quer, runzlig punktiert, seitlich schwach gerundet, vorn etwas schmaler als an der Basis. Mittelfurche schwach angedeutet. Basis fein gerandet. Flügeldecken länger als breit, parallel, hinter den Schultern schwach eingezogen. Punktstreifen ziemlich kräftig, Zwischenräume wenig breiter, schwach gewölbt, fein punktiert.

Färbung schwarz, Decken mit schwachem Bleiglanz. Behaarung gelb, kurz, und wenig aufgerichtet. Länge, 2.5 Millimeter.

MINDANAO, Dapitan (*Baker*), 1 Exemplar.

**Rhynchites foveifrons** sp. nov.

Kopf fein und nicht dicht punktiert; Stirn mit Grübchen. Augen mässig stark vorgewölbt, ihr Längsdurchmesser grösser als der Rüssel an der Basis dick. Rüssel des Männchens kaum so lang, des Weibchens länger als Kopf und Rüssel zusammen. Basis mit Mittelkiel, beiderseits desselben mit Längsfurche; Spitzenhälfte ziemlich kräftig punktiert. Fühler beim Männchen in der Mitte, beim Weibchen hinter der Mitte des Rüssels eingelenkt. Schaft- und das erste bis fünfte Geisselglied wenig an Länge verschieden; das siebente Geisselglied noch länger als breit. Glied 1 und 2 der Fühlerkeule so lang wie breit. Halsschild so lang wie breit, wenig kräftig runzlig punktiert; seitlich schwach und gleichmässig gerundet, am Vorderrand kaum schmaler als an der Basis; diese fein gerandet. Scheibe mit feiner Mittelfurche. Flügeldecken nicht ganz anderthalbmal so lang wie breit. Punktstreifen sehr kräftig; Zwischenräume schmal und nur vereinzelt punktiert.

Färbung schwarz; Halsschild, Brust, und Unterseite des Kopfes bisweilen mit schwachem Erzschein. Behaarung gelblich, lang abstehend, dazwischen kürzere wenig geneigte Härchen. Länge, 2.5 bis 3 Millimeter.

SINGAPORE (*Baker*), 2 Männchen, 1 Weibchen.

**Rhynchites discretus** sp. nov.

Kopf quer; fein und zerstreut punktiert. Augen mässig stark vorgewölbt, ihr Längsdurchmesser grösser als der Rüssel vor der Basis. Rüssel fast so lang wie Kopf und Halsschild zusammen, seicht gebogen. Basis mit scharfem Kiel und beiderseits desselben mit Längsfurche. Fühler hinter der Rüsselmitte eingelenkt. Schaft- und erstes Geisselglied gleichlang, mehr als doppelt so lang wie breit; das zweite und dritte Geisselglied kaum kürzer; die nächsten Glieder nehmen zur Keule hin allmählich an Länge ab, das siebente Glied jedoch noch länger als breit. Halsschild kaum so lang wie breit, fein und nicht dicht punktiert; eine leichte Neigung zu runzliger Punktierung besteht. Seitlich schwach gerundet und konisch zum Vorderrand verengt. Flügeldecken kaum anderthalbmal so lang wie breit. Punktstreifen an der Basis kräftig, hinten feiner; Zwischenräume breiter als die Streifen, flach, einzeln fein punktiert.

Färbung schwarz. Behaarung greis, lang abstehend, dazwischen kürzer und schwach geneigt. Seitenteile der Mittel- und Hinterbrust etwas dichter lang anliegend behaart, ohne jedoch den Grund zu verdecken. Länge, 3 Millimeter.

BORNEO, Sandakan (*Baker*), 1 Exemplar.

**Rhynchites dissimilicolor** sp. nov

Kopf glänzend, fein und zerstreut punktiert. Augen mässig stark vorgewölbt. Rüssel länger als Kopf und Halsschild zusammen, kaum gebogen; Basis mit kräftigem Kiel, beiderseits desselben tief längsgefurcht. Schaft- und erstes Geisselglied gleichlang; das zweite bis vierte Glied kaum länger; das fünfte Glied kürzer; das siebente Glied kaum länger als breit. Halsschild kaum so lang wie breit, glänzend, fein und entfernt stehend punktiert. Seitlich schwach und gleichmässig gerundet, am Vorderrand kaum schmaler als an der Basis. Flügeldecken anderthalbmal so lang wie breit; seitlich zunächst bis zur Hälfte der Decken parallel, dann stark konisch mit schwacher Rundung zur Spitze verschmälert. Punktstreifen hinter der Basis sehr kräftig, hinten etwas feiner werdend. Während die Zwischenräume vorn sehr schmal sind, werden sie nach hinten so breit wie die Streifen und sind einreihig fein und nicht dicht punktiert.

Färbung schwarz, Flügeldecken schwarzblau glänzend. Behaarung ziemlich lang abstehend, auf den Decken untermischt mit kürzeren, wenig aufgerichteten greisen Härchen. Unterseits mehr anliegend behaart. Länge, 3.5 Millimeter.

BORNEO, Sandakan (*Baker*), 1 Exemplar.

Dem *R. plagiocephalus* sp. nov. ähnlich; durch die Färbung, Punktierung des Halsschildes und der Decken, andere Fühlerbildung, und vor allem durch die Form der Flügeldecken, die bei *R. plagiocephalus* langgestreckt parallel sind, leicht zu trennen.

**Rhynchites furvus sp. nov.**

Kopf wie das Halsschild runzlig punktiert; Augen wenig vorgewölbt, ihr Längsdurchmesser grösser als die Stirn und der Rüssel an der Basis breit. Letzterer länger als Kopf und Halsschild zusammen, seicht gebogen. Basis wie bei den verwandten Arten mit Mittelkiel und jederseits mit Längsfurche. Spitzenhälfte rauh skulptiert. Fühler wenig hinter der Rüsselmitte eingelenkt; gedrungen gebaut. Schaftglied kaum länger als breit; das erste Geisselglied länglich oval und fast doppelt so lang wie das Schaftglied; das zweite Glied so lang wie das Schaftglied; das dritte und vierte Glied etwas länger; das fünfte und siebente Glied breiter als lang; das sechste Glied so lang wie breit. Halsschild etwas breiter als lang, seitlich schwach gerundet; die grösste Breite liegt kurz vor der Basis; durchaus runzlig punktiert. Flügeldecken länger als breit. Punktstreifen mässig kräftig; Zwischenräume durchaus runzlig. Der verkürzte Seitenstreifen geht hinter der Mitte der Decken in den Randstreifen über.

Färbung tiefschwarz, matt. Behaarung wenig deutlich, kurz, schwarz, und fast anliegend. Länge, 2.5 Millimeter.

BASILAN (*Baker*), 1 Tier.

Dem *R. rugiceps* sp. nov. am nächsten stehend; die runzlige Skulptur erfasst bei dieser Art jedoch auch die Decken und Brust; ausserdem sind die Fühler viel gedrungener gebaut.

**Rhynchites pellitus** sp. nov.

Kopf ziemlich fein und wenig dicht punktiert; Schläfen parallel. Augen des Weibchens grösser und flacher gewölbt als die des Männchens; der Längsdurchmesser beim Weibchen erheblich, beim Männchen wenig grösser als der Rüssel vor der Basis. Rüssel des Männchens etwas länger als das Halsschild, des Weibchens so lang wie Kopf und Halsschild zusammen; kräftig, seicht gebogen. Fühler in der Mitte des Rüssels eingelenkt. Weibchen: Schaftglied kurz, kaum länger als breit; das erste Geisselglied etwas länger; das zweite Glied so lang wie Schaft- und erstes Geisselglied zusammen; das dritte und vierte Glied gleichlang und etwas kürzer als das zweite Glied; das fünfte und sechste Glied so lang wie das erste; das siebente Glied wenig länger als breit. Das erste und zweite Glied der Keule länger als breit, gleichlang. Männchen: Die Geisselglieder werden vom zweiten Glied zur Keule hin allmählich etwas kürzer, das siebente Glied so lang wie breit, rundlich. Mittleres Keulenglied etwas kürzer als das erste. Halsschild etwas breiter als lang, wenig kräftig und ziemlich dicht punktiert. Die Seiten schwach gerundet, von der Basis zum Vorderrand schwach konisch verschmälert; Basis fein gerandet. Flügeldecken nach hinten etwas gradlinig verbreitert, anderthalbmal so lang wie breit. Punktstreifen mässig kräftig; Zwischenräume breiter als die Streifen, fein und dicht unregelmässig punktiert.

Färbung schwarz, Oberseite bläulich. Behaarung dicht greis, auf der Oberseite gemischt, abstehend und geneigt; ziemlich lang; auf der Unterseite anliegend. Länge, 3.5 bis 5 Millimeter.

LUZON, Los Baños (*Baker 603*), 1 Exemplar: Bataan (*Bureau of Science 9139 W. Schultze*), 20 Juni, 1908.

**Rhynchites pilumnus** sp. nov.

Kopf ziemlich kräftig und dicht punktiert; Augen gross und mässig kräftig vorgewölbt. Schläfen nach hinten nur undeutlich erweitert, halb so lang wie der Augenlängsdurchmesser. Rüssel ein wenig länger als Kopf und Halsschild zusammen; gleichmässig und kräftig gebogen; Basis mit stumpfem schwachglänzenden Kiel, im übrigen kräftig und dicht längsrunzlig punktiert. Rüsselspitze dreizipfelig ausgezogen, der mittlere Zipfel allerdings nur klein. Fühler vor der Rüsselmitte eingelenkt; Schaft- und erstes Geisselglied gleichlang, länglich oval, zusammen kaum so lang wie der Rüssel an der Einlenkungsstelle dick; das zweite bis vierte Glied etwas länger, untereinander wenig in der Länge verschieden; das fünfte Glied so lang wie das erste;

das sechste und siebente Glied wiederum etwas kürzer, doch noch länger als breit. Keule ziemlich kräftig; das erste und zweite Glied länger als breit. Halsschild so lang wie breit, ziemlich fein und sehr dicht punktiert; seitlich schwach gerundet, die grösste Breite liegt hinter der Mitte; zur Basis wenig, zum Vorderrand mehr verschmälert. Flügeldecken anderthalbmal so lang wie breit, seitlich parallel. Punktstreifen wenig kräftig, Zwischenräume flach und viel breiter als die Streifen.

Färbung grünlich blau, schwach glänzend; Fühler schwarz. Behaarung dünn, greis, anliegend, auf den Decken mit aufstehenden Haaren untermischt; auf dem Halsschild zur Mitte der Scheibe gerichtet. Auch die Unterseite anliegend behaart. Länge, 5.5 Millimeter.

MINDANAO, Iligan (*Baker 13950*), 1 Tier.

## Subgenus **Metarhynchites** novum

**Rhynchites arduus** sp. nov.

Kopf fein und wenig dicht punktiert; Schläfen konisch nach vorn verschmälert und die Augen wenig deutlich aus der Kopfwölbung hervortretend, also nur flach gewölbt; ihr Längsdurchmesser etwas grösser als der Rüssel an der Basis dick. Rüssel des Männchens wenig, des Weibchens viel länger als Kopf und Halsschild zusammen, schwach gebogen; Basis gekielt, zwischen der Fühlereinlenkung mit Längsgrübchen. Neben dem Mittelkiel läuft je eine Längsfurche bis zur Rüsselspitze heran. Im übrigen glänzend und mit reihig angeordneten länglichen Punkten besetzt. Männchen: Schaftglied etwas kürzer als das erste Geisselglied, länglich oval; das zweite bis fünfte Glied gleichlang und etwas kürzer als das erste; das sechste und siebente Glied so lang wie das Schaftglied. Das erste Glied der Keule etwas länger als breit; das zweite Glied derselben so lang wie breit. Halsschild wenig breiter als lang, runzlig punktiert; seitlich schwach gerundet, die grösste Breite liegt hinter der Mitte; der Vorderrand etwas schmaler als die Basis; diese fein gerandet. Flügeldecken anderthalbmal so lang wie breit, parallelseitig. Punktstreifen ziemlich kräftig, Zwischenräume schmaler als diese, fein entfernt stehend einreihig punktiert.

Färbung schwarz, Flügeldecken mit Bleiglanz. Behaarung kurz greis und wenig aufgerichtet untermischt mit etwas längeren aufstehenden schwarzen Härchen. Länge, 2.5 bis 3.2 Millimeter.

LUZON, Provinz Laguna, Mount Maquiling, Los Baños (*Baker*), 6 Exemplare.

### BYCTISCINI

### Genus BYCTISCIDIUS novum

Kopf konisch; Augen aus der Kopfwölbung nicht hervortretend. Rüssel schlank, länger als das Halsschild. Dieses konisch, vor der Basis am breitesten. Flügeldecken mit verkürztem Nahtstreifen. Epimeren der Mittelbrust von oben sichtbar. Hinterhüften seitlich verkürzt. Typus, *Rhynchites parcus* Voss.

Von *Rhynchites* durch die Hinterhüftbildung der *Byctiscus*-Arten verschieden. Von *Listrobyctiscus* durch den verkürzten Suturalstreifen, das kräftig und sehr dicht punktierte Halsschild, etc., leicht zu trennen. Von *Byctiscus* durch die Halsschildbildung und dem schlankeren Rüssel zu unterscheiden.

**Byctiscidius insularis** sp. nov.

Kopf zu den Augen konisch verschmälert, hinten äusserst fein und zerstreut punktiert, auf der Stirn etwas kräftiger und dichter. Augen aus der Kopfwölbung nicht hervortretend, auf der Stirn einander genähert; der Zwischenraum fast nur halb so breit wie der Rüssel vor der Basis; etwas längsfurchig eingedrückt. Rüssel leicht gebogen, so lang wie Kopf und Halsschild zusammen, oben glatt, nur seitlich wenig kräftig punktiert. Fühler in der Mitte des Rüssels eingelenkt. Schaftglied sehr kurz, kaum länger als breit, das erste Geisselglied fast doppelt so lang; das zweite und dritte Glied etwas schwächer aber so lang wie das erste Glied, das vierte Glied kürzer; das fünfte Glied noch deutlich länger als breit; das sechste und siebente Glied schwach quer. Keule kräftig; das erste und zweite Glied quer; das dritte Glied kaum länger als breit. Halsschild wenig breiter als lang, seitlich nur schwach gerundet, nach vorn stärker verengt als an der Basis; kurz vor der Basis am breitesten. Punktierung ziemlich kräftig und dicht; auf der Scheibe mit feiner Längsnaht. Basis zum Schildchen etwas geschweift vorgezogen und fein gerandet. Flügeldecken wenig länger als breit, kräftig und dicht reihig punktiert; Zwischenräume schmaler als die Streifen, gewölbt und unpunktiert; etwas verrunzelt. Der vorletzte Punktstreifen vereinigt sich mit dem Randstreifen in der Höhe des dritten Bauchsegments. Pygidium gross, fast länger als breit, senkrecht stehend; dicht und flach punktiert, am Grunde überall fein gekörnelt; ringsum gerandet, an der Basis geschweift. Hinterhüften seitlich stark verkürzt; der vorgezogene Lappen des ersten Abdominalsegments tangiert auf breiter Basis den Hinterrand der Hinterbrust. Tibien grade; das erste Tarsenglied viel kürzer als das zweite und dritte Glied zusammen.

Färbung schwarz mit leichtem bläulichen Schein. Oberseite unbehaart. Die Mitte des Bauchs, namentlich das zweite bis vierte Abdominalsegment, sind langabstehend büschelförmig behaart. Länge, 2.5 Millimeter.

PENANG (*Baker*), 1 Tier.

## Genus LISTROBYCTISCUS novum

Kopf konisch; Augen aus der Kopfwölbung nicht hervortretend. Halsschild konisch, schwach gerundet, und meist kräftig zum Kopf verschmälert, in der Regel an der Basis am breitesten, weniger oft etwas eingezogen; beim Männchen bisweilen seitlich mit Dornen bewehrt, die jedoch mehr auf der Unterseite liegen und dadurch weniger leicht sichtbar sind. Rüssel schlank und meist erheblich länger als Kopf und Halsschild zusammen. Flügeldecken ohne verkürzten Nahtstreifen; vorletzter Seitenstreifen verkürzt und meist in der Höhe der Hinterhüften in den Randstreifen eingelenkt. Hinterhüften seitlich verkürzt. Glänzend und unbehaart.

Typus, *Rhynchites corvinus* Pascoe.

Meist hochglänzende, schwarze oder blaue Tierchen, deren Abtrennung von *Rhynchites* sich der verkürzten Mittelhüften wegen, bedingt durch die lappenartige Ausbildung des ersten Abdominalsegments, notwendig macht. Aehnlich wie bei den Bariiden treten die Epimeren der Mittelbrust zwischen Decken und Halsschild höher hinauf und sind von oben stets gut sichtbar.

### Listrobyctiscus corvinus (Pascoe).

LUZON, Mount Maquiling (*Baker*), 1 Exemplar.

Die Nominatform ist tiefschwarz gefärbt, und Tiere von Sumatra und Java sind selten mit leichtem bläulichen Schein versehen. Von Sandakan, Borneo, liegen mir jedoch zwei Tiere vor, die schöne tiefblaue Decken haben, sich aber sonst von der schwarzen Form nicht trennen lassen. Sie möge *L. coeruleipennis* forma nova benannt sein.

### Listrobyctiscus laevigatus (Pascoe).

In den Arten mit unbewehrtem Halsschild gehörend und sich von *L. corvinus* (Pascoe) durch viel schlankere und gestrecktere Fühler auszeichnend. Die Nominatform wurde von Pascoe mit schwachblauen Decken und im übrigen mehr purpurschwarzen

Körper beschrieben. Mir liegen eine ganze Anzahl Tiere von Celebes, Borneo, und den Philippinen vor, die in den übrigen von Pascoe angegebenen Merkmalen mit der Beschreibung übereinstimmen, jedoch wie *corvinus* tiefschwarz gefärbt sind. Diese Form möge *moris* forma nova benannt sein. Tiere von blauer Färbung liegen mir von Luzon vor: *luzonensis* forma nova (*5936*). Zwei von diesen Tieren weichen in der Fühlerbildung ab: das dritte Geisselglied ist etwas länger als das zweite Glied (bei *laevigatus* Glied 2 gleich 3). Möglicherweise handelt es sich hier um eine neue Art. Die blauen Weibchen werden sich namentlich von den nachstehend beschriebenen Arten mit bei den Männchen bewehrtem Halsschild schwierig trennen lassen. *Rhynchites manillensis* Westwood wird vielleicht auch in diese Gattung gehören.

Die f. *moris* liegt mir von folgenden Fundorten vor:

LUZON, Provinz Laguna, Los Baños, Mount Maquiling: Provinz Tayabas, Malinao (*Baker 4422*). MINDANAO, Iligan (*Baker*), Agusan River (*Bureau of Science 13680 W. Schultze*), 30 September, 1910.

**Listrobyctiscus rubriventris** sp. nov.

Kopf nur äusserst fein und nicht dicht punktiert; Stirn nur halb so breit wie der Rüssel vor der Basis. Dieser wenig länger als Kopf und Halsschild zusammen, unten gleichmässig gebogen, oben etwas buckelig aufgeworfen. Fühler beim Weibchen in, beim Männchen etwas vor der Mitte des Rüssels eingelenkt. Männchen: Schaft und erstes Geisselglied wenig länger als breit, gleichlang; das zweite und dritte Glied so lang wie das erste; das vierte bis siebente Glied so lang wie breit; zur Keule hin allmählich kräftiger werdend. Das erste und zweite Glied der Keule schwach quer. Weibchen: Das erste Geisselglied viel länger als das Schaftglied; das zweite Glied so lang wie das erste; das dritte Glied kürzer. Halsschild konisch und seitlich nur schwach gerundet, an der Basis am breitesten; äusserst fein und nicht dicht punktiert. Beim Männchen kurz vor dem Vorderrand beiderseits mit einem Dorn versehen. Schildchen quer. Flügeldecken etwa ein-und-ein-drittelmal so lang wie breit. Punktstreifen hinter der Basis kräftig, dann nach hinten viel feiner werdend. Zwischenräume breit, unregelmässig punktiert.

Färbung schwarz; Abdomen mit Pygidium rot. Länge, 3.2 bis 3.5 Millimeter.

MINDANAO, Iligan, Zamboanga (*Baker*), 1 Pärchen.

**Listrobyctiscus chalybaeus** sp. nov.

Kopf fein und nicht dicht, auf der Stirn etwas kräftiger und dichter punktiert. Augen auf der Stirn einander etwas genähert, Zwischenraum kleiner als der Rüssel vor der Basis breit. Rüssel so lang wie Kopf und Halsschild zusammen; seitlich gesehen zunächst fast grade, dann von der Fühlereinlenkung ab, die etwas vor der Mitte erfolgt, gebogen; von oben gesehen nur kurz vor der Spitze etwas verbreitert; ungekielt, glatt; fein und zerstreut punktiert. Schaft- und erstes Geisselglied etwa gleichlang, länglich oval, doppelt so lang wie breit; das zweite Geisselglied am längsten, verkehrt kegelförmig, das dritte Glied kaum so lang wie das erste Glied; das vierte Glied wenig kürzer als das dritte Glied; das fünfte Glied noch deutlich länger als breit; das sechste Glied so lang wie breit; das siebente Glied kräftiger und etwas breiter als lang. Keule ziemlich kräftig, Glied 1 und 2 schwach quer. Halsschild länger als breit, hinter der Mitte ziemlich kräftig gerundet, zur Basis gerundet verschmälert, zum Vorderrand gradlinig verengt, hier erheblich schmaler als an der Basis. Punktierung ziemlich fein und auch etwas dicht. Kurz vor dem Vorderrand seitlich mit kleinem, nach vorn gerichtetem Dorn bewehrt; Basis fein gerandet. Flügeldecken länglich, fast anderthalbmal so lang wie breit. Punktstreifen im basalen Viertel kräftig, dann ziemlich unvermittelt feiner werdend. Zwischenräume breit und flach; sehr fein, etwas unregelmässig punktiert.

Färbung blau, glänzend; Kopf, Rüssel, Fühler, Tibien, und Tarsen schwarz. Länge, 4 Millimeter.

BASILAN (*Baker*), 1 Männchen.

**Listrobyctiscus armaticollis** sp. nov.

Kopf sehr fein und nicht dicht punktiert; Stirn erheblich schmaler als der Rüssel vor der Basis dick. Rüssel so lang wie Kopf und Halsschild zusammen, leicht gebogen; auf der Basalhälfte kräftig gekielt, der Kiel läuft zur Stirn hinauf; vorn fein und ziemlich dicht punktiert. Fühler kurz vor der Rüsselmitte eingelenkt. Schaftglied kaum länger als breit, das erste Geisselglied doppelt so lang wie breit; das zweite und dritte Glied etwas kürzer als das erste Glied, untereinander gleichlang und wenig länger als das vierte Glied; das fünfte Glied etwas länger als breit; das sechste Glied so lang wie breit; das siebente Glied quer. Keule ziemlich kräftig, das zweite Glied stärker quer und etwas kürzer als das erste. Halsschild etwas kräftiger und dicht punktiert; an der Basis etwas eingezogen und wenig breiter als der Vorderrand. Basis fein gerandet. Der Seitenzahn ist klein und spitz und steht mehr seitlich im vorderen Drittel. Flügeldecken etwa anderthalbmal so lang wie breit, seitlich schwach gerundet. Punktierung auf der Basalhälfte kräftig, hinten viel feiner. Zwischenräume einreihig punktiert.

Färbung schwarz; Flügeldecken bläulich Länge, 2.5 Millimeter.

LUZON, Mount Banahao (*Baker 5937*), 1 Männchen.

**Listrobyctiscus tibialis** sp. nov.

Kopf nur fein, flach und ziemlich dicht punktiert. Rüssel länger als Kopf und Halsschild zusammen, auf der Basalhälfte gekielt, auch die Seitenränder scharf kielartig aufgeworfen. Fühler kurz vor der Rüsselmitte eingelenkt. Schaftglied wenig länger als breit; das erste bis dritte Geisselglied viel länger als das Schaftglied und untereinander gleichlang; das vierte und fünfte Glied länger als breit; das sechste Glied so lang wie breit; das siebente Glied viel stärker, zur Keule übergehend. Keule gedrungen, Glied 1 und 2 quer. Halsschild fein und dicht punktiert, seitlich gerundet, zur Basis gerundet verengt; am Vorderrand etwas schmaler als an der Basis. Der seitliche Dorn befindet sich dicht vor dem Vorderrand und ist etwas auswärts gerichtet. Schildchen stark quer, viereckig. Flügeldecken bei dieser Art länger, seitlich parallel, wohl ein-und-dreiviertelmal so lang wie breit. Punktierung auch vorn weniger stark; Zwischenräume viel breiter als die Streifen, ein- bis zweireihig punktiert. Die Hintertibien weisen bei dieser Art in der Mitte der Innenseite einen kräftigen Buckel auf; die Spitze trägt einen kleinen Dorn.

Färbung schwarz; Flügeldecken blau. Länge, 4 Millimeter.

LUZON, Provinz Laguna, Mount Maquiling (*Baker 2223*), 1 Männchen.

# ADDITIONS TO THE HERPETOLOGICAL FAUNA OF THE PHILIPPINE ISLANDS, III

By EDWARD H. TAYLOR

*Of Manila, Philippine Islands*

THREE PLATES

This is the third[1] of a series of papers embodying results of a study of the collections made by myself in the Philippines in 1920, 1921, and 1922.

In this paper the following species are described as new:

AMPHIBIANS

*Ichthyophis glandulosus.*
*Rana woodworthi.*
*Rana acanthi.*
*Rana micrixalus.*

LIZARDS

*Lepidodactylus herrei.*
*Mabuya bontocensis.*
*Sphenomorphus stejnegeri.*

SNAKES

*Cyclocorus nuchalis.*
*Calamaria polillensis.*
*Calamaria hollandi.*
*Boiga schultzei.*

The following species are listed with notes on color, scalation, and habitat. Other pertinent data are also recorded.

AMPHIBIANS

*Rana vittigera* Wiegmann.
*Rana magna* Stejneger.
*Rana leytensis* Boettger.
*Rana similis* (Günther).

LIZARDS

*Hemidactylus garnotii* Duméril and Bibron.
*Peropus mutilatus* (Wiegmann).
*Cosymbotus platyurus* (Schneider).
*Gekko gecko* (Linnæus).
*Draco bimaculatus* Günther.
*Gonyocephalus interruptus* Boulenger.
*Otosaurus cumingii* Gray.
*Sphenomorphus decipiens* (Boulenger).
*Sphenomorphus curtirostris* Taylor.

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[1] Taylor, Edward H., Additions to the herpetological fauna of the Philippine Islands, I, Philip. Journ. Sci. 21 (1922) 161–206; II, ibid., 21 (1922) 257–303.

### LIZARDS—continued

- *Sphenomorphus atrigularis* Stejneger.
- *Sphenomorphus steerei* Stejneger.
- *Sphenomorphus biparietalis* Taylor.
- *Sphenomorphus fasciatus* (Gray).
- *Sphenomorphus variegatus* (Peters).
- *Leiolopisma pulchellum* (Gray).
- *Tropidophorus grayi* Günther.
- *Tropidophorus rivularis* Taylor.
- *Brachymeles eleræ* Taylor.

### SNAKES

- *Typhlops braminus* (Daudin).
- *Natrix auriculata* (Günther).
- *Cyclocorus lineatus* (Reinhardt).
- *Hurria rynchops* (Schneider).
- *Hurria microlepis* (Boulenger).
- *Holarchus ancorus* (Girard).
- *Boiga cynodon* (Boie).
- *Laticauda semifasciata* (Reinwardt).

## AMPHIBIANS

**Ichthyophis glandulosus** sp. nov. Plate 3, figs. 4, 5.

*Type.*—No. 1595A, E. H. Taylor collection; collected at Abung-abung, Basilan, October 23, 1921, by Edward H. Taylor.

*Description of type.*—Head rather triangular, the snout conical; nostrils very far forward, the distance between them a little less than half the distance between eyes and slightly more than half the distance nostril to eye; eye very small, dim, the pupil and iris not distinguishable, the distance between eyes equal to their distance from end of snout; exsertile tentacle very close to mouth, the distance from eye less than half its distance from nostril; eye and nostril on a level, equidistant from commissure of mouth; nostril directed upward; at some distance behind angle of jaws a strong groove about the head, continuous save in the midoccipital region; posterior to this a second, very strong groove crosses throat, extending some distance on the upper surface of head; a third, ill-defined groove behind this delimits neck; skin of body smooth with 273 small transverse folds from neck to tip of tail, the folds forming a median dorsal angle save on the anterior and posterior parts of body; the folds on the belly are very indistinct; the angle formed is directed backward, while on the back the angle formed by the junction of the folds is directed forward; tail very short, ending bluntly; anal opening a longitudinal slit; on each side of body is a broad dorsolateral glandular fold which extends from head along body to a point a short distance in front of tail; this fold is strongly defined, of equal prominence its entire length; upper jaw with two well-developed series of teeth, the inner series extending slightly farther back than the outer; lower jaw with a strongly developed outer series and a short inner series of teeth.

*Color in life.*—Deep lavender to slate; more olive than lavender below. In formalin the specimen is brownish lavender with scattered deep purple markings.

*Measurements of the type of Ichthyophis glandulosus sp. nov.*

| | mm. |
|---|---|
| Total length | 250 |
| Tail from end of anus | 4 |
| Width of body | 12 |
| Distance between nostrils | 2.9 |
| Distance between eyes | 6 |
| Nostril to eye | 4.5 |
| Eye to end of snout | 6 |
| First neck groove to tip of lower jaw | 8 |
| Second neck groove to tip of lower jaw | 10.5 |
| Third neck groove to tip of upper jaw | 17 |
| Width of glandular fold | 3 |
| Distance between folds | 6.5 |
| Diameter of eye | 0.7 |

*Variation.*—There are four specimens in the collection, all collected in the same immediate locality. One is young, 165 millimeters in length. It is of a deep slate-purple color. The glandular folds are present. The posterior part of the head is less widened than in the adult specimens.

*Remarks.*—I have with some hesitancy described this as a new species, not having comparative material of *Ichthyophis monochrous* Bleeker. There appears to be no complete description of that species (unless it be the type description, which I do not have). This new species seems to differ from *I. monochrous* in the presence of the two dorsolateral glandular folds and in having the distance between eyes equal to the length of snout instead of greater.

From *Ichthyophis weberi* Taylor it differs in having two rows of teeth instead of a single row in the lower jaw, in the presence of dorsolateral glandular folds, and in the shape of the head. In *I. weberi* the sides of the head are more nearly parallel, and the snout is more rounded, the grooves on the neck are very dim, and the eye is very distinct.

Specimens were collected under logs in moist situations along a small forest stream in southern Basilan. Mr. Hamilton, who had established the logging camp at Abung-abung, told me that he had frequently seen specimens of this species when digging trenches to drain a small swampy area near the camp.

**Rana vittigera Wiegmann.**

*Rana vittigera* WIEGMANN, Nova Acta Acad. Leop. Carol. (1836) 225, pl. 21, fig. 1; TAYLOR, Philip. Journ. Sci. 16 (1920) 236, pl. 2, fig. 3; Amphibians and Turtles of the Philippine Islands (1922) 37.

In the recent papers of Anandale[2] and Boulenger[2] on the identity of *Rana tigrina* Daudin and the allied forms, considerable light has been thrown on a difficult subject. In as much as certain of their conclusions affect the specific designation of two Philippine frogs—namely, *R. vittigera* Wiegmann and a form which I have named *R. moodiei*—I deem it wise to reassert my opinion in the light of these publications. My study of these two forms was made and published before I had seen any of the papers mentioned; in fact, I had had no copy of Wiegmann's paper describing the species.

I recently obtained a copy of Wiegmann's description and figure, and I am now more than ever convinced that the species *Rana vittigera* Wiegmann is distinct from *R. tigrina* and its allied forms and that Wiegmann's name should be applied to it.

Wiegmann's specimens, from which he drew his type description and from which his figure was drawn, appear to have been taken at Laguna de Bay, Luzon. He states:

> Diese Art findet sich sowohl auf der Insel Luzon in der Laguna de Bay, als auch in China; an beiden Orten wird sie häufig gegessen, und besonders auf dem Markte von Macao wird sie täglich zu Tausenden verzehrt.

Many specimens I have taken near Laguna de Bay agree with the drawing given in Plate 21, fig. 1, of Wiegmann's paper in marking, the folding of the skin, the shape of the head, and the general contour of the body. There is no free dermal fringe along the outer edge of the fifth toe which occurs in *R. tigrina* and allied forms. There is, however, a slight dermal fold, but this is in no way similar to the membranous fringe on the outer side of the toe in *R. tigrina* and *R. moodiei*.

Wiegmann himself points out the similarities and differences between *Rana vittigera* and *R. limnocharis*. However, if it has been or can be proved that these two forms are identical, the name *R. vittigera* will be used instead of *R. limnocharis*. In fact, *R. limnocharis* is attributed to Boie,[3] but I find that the species has always been attributed by subsequent authors to Wiegmann. I presume that, as far as Boie is concerned, the name is a nomen nudum. There is no outer metatarsal tubercle present in the Philippine *R. vittigera;* it is said to be present in *R. limnocharis.*

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[2] Rec. Ind. Mus. 15[2] (1918) 51–67.

[3] Wiegmann loc. cit.

Regarding *Rana moodiei* I am not so certain. This species occurs in central Luzon probably as frequently as does *R. vittigera.* It would appear that Wiegmann, if he obtained specimens, lumped them with *R. vittigera* just as other writers have lumped the two forms under *R. tigrina.*

That the two species *Rana vittigera* and *R. moodiei* are distinct cannot be questioned. That *R. moodiei* is distinct from Boulenger's varieties of *R. tigrina* or of Anandale's related species, I am not so certain. I am submitting specimens to Dr. Malcolm Smith, of Bangkok, Siam, in order that comparisons can be made.

I also do not agree with Boulenger in regarding the two forms figured by Wiegmann on Plate 21, figs. 1 and 2, as identical species. Had the specimen illustrated by fig. 2 been taken in the Philippines I should declare it *Rana moodiei,* since that species differs from *R. vittigera* as the two figures differ from each other.

**Rana woodworthi** sp. nov. Plate 1, figs. 1, 2.

*Type.*—No. 1921, E. H. Taylor collection; collected near Los Baños, Laguna Province, June 12, 1921, by Edward H. Taylor.

*Description of type.*—Choanæ small, widely separated, not concealed by overhanging jaw; vomerine teeth in two series beginning near inner anterior border of choanæ, but separated from them by a distance equal to half the diameter of choanæ and extending much behind their posterior level, separated narrowly from each other; tongue with two rounded posterior horns widely separated at base; two moderately prominent teeth in anterior part of lower jaw; openings of vocal sacs very small, near angle of mouth; snout rather long, pointed; canthus rostralis very prominent, angular; upper part of lores nearly perpendicular, lower part sloping obliquely to mouth; a slight groove between eye and nostril; eye rather small, its diameter equal to distance from eye to slightly beyond nostril; distance from nostril to tip of snout contained nearly twice in distance between eye and nostril; distance between nostrils equal to their distance from eye, as well as to the height of snout in front of eyes; tympanum distinct, its diameter equal to little more than half the diameter of orbit, separated from eye by a distance equal to two-thirds the diameter of tympanum; width of upper eyelid one and one-third times interorbital distance; skin of head very smooth; posterior part of eyelid with tubercles; loreal region with very slight tuberculation; a dim fold connecting posterior corners of eyes; a distinct dorsolateral glandular fold from eye, continuing two-thirds the length of body; a stronger supratympanic fold, separated from the dorsolateral fold, goes from eye to insertion of arm, forming an obtuse angle above tympanum; a slight ridge on posterior part of lower jaw continuing in a straight line to arm as a glandular fold, separated from supratympanic fold posteriorly by a narrow groove; skin on anterior part of body nearly smooth; skin on posterior part of back and upper surface of tibia covered with numerous minute tubercles with occasional larger ones; certain of those in middle part of back arranged in two longitudinal rows; chin, throat, breast, belly, and underside of limbs entirely smooth; fingers terminating in small rounded knobs, first finger distinctly longer than second but scarcely reaching penultimate tubercle on third; subarticular tubercles moderate, carpal tubercles rather indistinct; toes about four-fifths webbed, the web reaching a short distance below tip of third, and slightly beyond penultimate tubercle on fourth; subarticular tubercles strong; inner metatarsal tubercle elongate, little more than one-third the length of first toe; toes with small knobs at tips; no outer metatarsal tubercle; a distinct skinfold on outer side of fifth toe; a slight fold from metatarsal tubercle to near keel; hind limb brought forward tibiotarsal articulation reaches to nostril.

*Color in life.*—Above gray-lavender with very dim darker markings; a dark loreal streak and a large dark spot from eye to arm involving tympanum; three large spots on upper and lower lips; a dark spot above insertion of arm; limbs barred full length; posterior aspect of femur dark purplish with a longitudinal yellow streak; a yellow streak on the glandular fold behind angle of jaws; underside of forearm very dark with a row of very small yellow dots; chin and breast dusky, mottled with purple; underside of hands and feet purplish; a small yellow spot between and slightly anterior to eyes.

*Variation.*—The chief variation noted is in color. Certain specimens have the body brownish lavender with islandlike spots over the entire back; some have a V-shaped mark on the shoulders. The strong tympanic spot is invariably present and is usually very sharply defined, especially in young specimens. There are usually some deep black spots in the groin. The loreal streak is constant.

*Measurements of three specimens of Rana woodworthi sp. nov.*

| | No. 1921, type. | No. 1922. | No. 1928. |
|---|---|---|---|
| | *mm.* | *mm.* | *mm.* |
| Snout to vent | 69 | 69 | 57 |
| Snout to eye | 11 | 11 | 9 |
| Diameter of eye | 9 | 8.9 | 7 |
| Length of head | 31 | 80 | 23 |
| Width of head at tympanum | 26 | 26 | 20 |
| Depth of head in front of eye | 7.5 | 7.5 | 6 |
| Eye to nostril | 6.8 | 7 | 5.1 |
| Upper eyelid | 6.8 | 7 | 5 |
| Interorbital space | 58 | 5.5 | 4.2 |
| Forelimb | 41 | 40 | 32 |
| Longest finger | 17 | 16 | 13.5 |
| Hind limb | 112 | 115 | 99 |
| Femur | 36 | 37 | 28 |
| Tibia | 36 | 88 | 81 |
| Longest toe to metatarsal tubercle | 34 | 36 | 28 |

Specimens from Polillo Island agree very well in general contour and markings. The eyelids, however, are a little narrower, practically equaling the interorbital distance; the first finger is slightly longer proportionally, reaching beyond the penultimate subarticular tubercle on the third finger.

In my previous works on Philippine Amphibia[4] I confused this species with *Rana leytensis* which apparently does not occur in Polillo.

*Remarks.*—The frogs of the *Rana tigrina* group which occur throughout southern Asia and in the archipelagoes are no more difficult to differentiate than are those belonging to the *R. macrodon* group. It has been the custom of most systematists, at least when dealing with Philippine specimens, to lump together under the name of *R. macrodon* all species having the enlarged bony prominences in the lower jaw.

Stejneger[5] described the large Philippine frog occurring generally over the Islands (listing Mindanao, Basilan, Mindoro, and Luzon) under the name *Rana magna.* He differentiates the form from *R. macrodon* Duméril and Bibron, but does not mention the relationship with *R. modesta* Boulenger which was described from Celebes by Boulenger.[6]

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[4] Philip. Journ. Sci. 16 (1920) 248; Amphibians and Turtles of the Philippine Islands (1922) 49.

[5] Smithson. Misc. Col. 52 (1909) 437.

[6] Proc. Zool. Soc. London (1897) 238.

When I prepared my description of *Rana magna* for my Philippine Amphibia,[7] I had before me specimens of this new species and a large series of specimens belonging to *R. magna*, both of which at that time I regarded as merely geographical and age variations of *R. magna*. The principal variations were recorded.

In my collections made in 1921 on and about Mount Maquiling I noted that two distinct forms occurred in the same locality, and with large series of both it was possible to separate the two forms without difficulty.

*Rana woodworthi* differs from the species which I identify as *R. magna* Stejneger in the presence of a dorsolateral glandular fold, a smaller eye, a less-pointed snout, a loreal streak, and a strong tympanic spot. In *R. magna* the toes are webbed to the tip. In specimens of the two species having the same snout-to-vent measurements *R. magna* is less slender, and somewhat shorter limbed. The young of *R. magna* do not have dorsolateral folds!

The type specimen was collected from a small, nearly dry stream bed which lies between Camp Eldrige, Los Baños, and the College of Agriculture. The frogs were perched along the edge of small stagnant pools. Numerous specimens were taken.

The species is named for Harold Evans Woodworth, professor of entomology, College of Agriculture, Los Baños.

**Rana magna** Stejneger. Plate 1, fig. 3.

*Rana magna* STEJNEGER, Smithson. Misc. Coll. 52 (1909) 437; TAYLOR, Amphibians and Turtles of the Philippine Islands (1922).

I collected specimens of this species in Kalinga, Bontoc, Ifugao, and Benguet Subprovinces, Laguna and Bataan Provinces, Luzon Island; and on Polillo, southeastern Mindanao, and Basilan Islands. I have recently obtained specimens from southern Negros through the courtesy of Dr. Albert C. Herre.

The specimens vary more or less in the character and number of the tubercles on the back, the relative position and size of the tympanum, and the size of the eye in relation to the length of the snout. In the material at hand I have been unable to find stable characters that would separate the species into varieties. In Palawan a related species occurs which has been regarded by other authors as *Rana macrodon*. It is, however, well differentiated from that species by the presence of the vocal sacs in the male and the absence of well-defined canthi rostrales. It is described in this paper as *R. acanthi* sp. nov.

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[7] Philip. Journ. Sci. 16 (1920) 243, pl. 2, fig. 2.

Specimens of *Rana magna* usually are discovered perched on banks of small mountain streams in which they take refuge on the approach of anyone. The frog is sought for food all over the Islands, and very large specimens are rare.

Specimens from northern Kalinga appear to have better-developed spiny tubercles over the body than the southern specimens, particularly in the latter half of the back. Specimens from Ifugao, obtained by Prof. H. Otley Beyer, appear to represent a distinct species. However, the specimens are all young, and the fixing fluid has hardened them. I await more material before disposing of these forms.

**Rana acanthi** sp. nov. Plate 2, fig. 1.

*Type.*—No. 539, E. H. Taylor collection; collected on Busuanga Island, Calamian Islands, by Edward H. Taylor.

*Description of type.*—Choanæ large, rounded; vomerine teeth in two elongate, oblique series, beginning near anterior inner border of choanæ and lying between and behind choanæ, separated from each other by a distance equal to less than one-third the length of a single series; tongue large, with two elongate horns separated at base; no tubercles; openings of vocal sacs moderately large; two sharp-pointed fanglike teeth in anterior part of lower jaw, head strongly widened in tympanic region; snout rounded when seen from above in lateral profile; canthus rostralis not distinct, rounded; nostrils nearer end of snout than eye; eye moderately large, its diameter equal to distance from eye to beyond nostril; tympanum small, less than two-thirds eye (on right side tympanum is indistinguishable), separated from eye by a distance greater than half its diameter; a strong fold from eye to insertion of arm, forming an angle above tympanum; snout smooth; posterior part of eyelid granular; loreal region slightly concave, sloping very obliquely to mouth, slightly granular; an indistinct V-shaped fold on back followed by two series of distant rounded tubercles which extend to anus; sides and temporal region with short longitudinal folds; very minute scattered tubercles on leg; a slight glandular tubercle behind angle of mouth; a few inconspicuous folds below angle of jaw; belly, chin, throat, and underside of limbs entirely smooth; side with two rows of tubercular granules terminating in groin; fingers slender, terminating in small rounded knobs, not wider than digits; first finger much longer than second, extending as far as fourth; subarticular tubercles well developed; carpal tubercles indistinct; toes about two-thirds webbed, the web reaching the tips by very slender margins on outer side of first, second, and third toes; an elongate inner metatarsal tubercle, followed by a small fold on heel; a well-defined skin flap on outer side of fifth toe; no outer tubercle; tibiotarsal articulation reaches tip of snout.

*Color in life.*—Above mottled gray to gray-brown with indistinct dark markings; a broad cream-yellow line runs from snout to anus, the edges not sharply defined, and more or less mottled and marked with darker; markings on lips very indistinct; tympanum brown; throat dirty gray-white, belly, under thigh, and groin canary to lemon yellow; limbs very dimly barred with darker.

*Measurements of type of Rana acanthi sp. nov.*

| | mm. |
|---|---|
| Snout to vent | 73 |
| Snout to eye | 12 |
| Diameter of eye | 10 |
| Eye to nostril | 8 |
| Upper eyelid | 6 |
| Interorbital distance | 6 |
| Length of head | 31 |
| Width of head | 29 |
| Forelimb | 41 |
| Hind limb | 114 |
| Tibia | 38 |
| Femur | 36 |
| Longest toe to end of metatarsal tubercle | 35 |

*Variation.*—There is at hand a good series of young and half-grown specimens from northern Palawan and Busuanga. The characters recorded for the type are evident in most of them. The broad stripe on the back is absent in only one of the larger specimens, but is wanting in several of the smaller specimens. The development of the two teeth in the anterior part of the lower jaw depends upon age and sex, being largest in the older males. Two of the specimens are almost uniform gray-brown above, with the cream-yellow stripe and a light area above the arm and below the posterior part of the eye; the bars on the leg are more strongly marked than in the type.

*Remarks.*—This belongs to the *Rana macrodon* group of frogs, characterized by the enlarged teeth in the lower jaw, the skin flap on the outer toe, and the absence of the outer metatarsal tubercle. The Philippine forms, *R. magna* Stejneger, *R. woodworthi* sp. nov., and the present species differ from *R. macrodon* in having vocal sacs. *R. acanthi* sp. nov. differs from the two Philippine species in the presence of the broad medial stripe (which is invariably absent in *R. magna* and *R. woodworthi*), in the absence of angular canthi rostrales, and in the arrangement of the dorsal skin folds. The leg is longer than in *R. magna*, and the dorsolateral fold of *R. woodworthi* is absent. The webbing of the toes is much the same as in *R. woodworthi* but less than in *R. magna*.

The specimens were collected about a small sluggish stream. Many that were seen escaped capture by diving in the water and remaining under for a considerable time.

### Rana leytensis Boettger.

*Rana leytensis* BOETTGER, Zool. Anz. (1893) 365; BOULENGER, Proc. Zool. Soc. London (1897) 228; TAYLOR, Philip. Journ. Sci. 16 (1920) 246, pl. 2, fig. 1.

The type of this species from Leyte measured 28 millimeters, and the largest one of the specimens reported by Boulenger, from Celebes, measured only 38 millimeters. Philippine specimens for the most part appear to attain a larger size. Most of the adults in my collection from Zamboanga and Basilan average about 50 millimeters while the largest specimen (from Abung-abung, Basilan) measures 56 millimeters. The specimens show the same color variations as recorded by Boulenger. Some have a more or less continuous dorsolateral fold, but in by far the greater number the folds are broken and more or less irregularly arranged. The V-shaped mark on the shoulders is present.

The specimens from Jolo were collected for the most part on the top of Bud Daho, an old volcanic crater with an elevation of about 600 meters. These are very much smaller than the Zamboanga and Basilan specimens, are lighter in color, and the pads on the toes are appreciably larger. The largest of thirty-four specimens measures only 39 millimeters.

I have called attention to the presence of the enlarged teeth in the lower jaw of this species,[8] which are plainly visible in specimens measuring between 40 and 50 millimeters in length; smaller male specimens show the teeth to some degree.

I have examined two specimens from Sibuyan Island, which I have doubtfully referred to this species. They are immature, and one of them has the digit of the legs obviously deformed. More material must be obtained before this point can be decided. Specimens of the Polillo frog which I referred to this species belong to the species *Rana woodworthi* sp. nov.

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[8] Loc. cit.

**Rana micrixalus** sp. nov. Plate 2, figs. 2, 3.

*Type.*—No. 1598A, E. H. Taylor collection; collected at Abungabung, Basilan, October 20, 1920, by Edward H. Taylor.

*Description of type.*—Choanæ small, only partially concealed by overhanging jaw; vomerine teeth distinct, in two oblique series lying between and behind choanæ, separated from each other by a distance only little less than the length of one series; tongue oval with two slight horns, widely separated at base; no tubercle on tongue; snout short, rounded; nostril distinctly lateral, about equidistant from eye and tip of snout; canthus rostralis rounded; loreal region sloping slightly; tympanum large, distinct, more than three-fourths diameter of eye, separated from eye by a distance equal to little more than one-third diameter of tympanum; eye small; upper eyelid contained in interorbital distance one and one-half times; diameter of orbit equal to its distance from anterior edge of nostril; skin above very minutely granulate, nearly smooth on head, but with large pustular tubercles on back; a pair of large pustular tubercles forming an indistinct V-shaped mark on shoulders; a very broad glandular dorsolateral fold from eye to near anus; a supratympanic fold, from eye to insertion of arm, in the form of a curve which covers edge of tympanum; it forms an angle above arm and ends in a tubercle; two glandular tubercles at angle of mouth; arm granular above; tibia with two prominent enlarged tubercles and several smaller ones; tips of fingers ending in small rounded knobs; hand without webs; first finger longer than second; subarticular tubercles very large, well developed; a strong inner carpal tubercle and a small rounded outer; toes with tips dilated into small disks; subarticular tubercles well developed, toes about half webbed, the membrane not reaching any of the disks save as a narrow margin; no skin fold on outer side of fifth toe; a prominent inner metatarsal tubercle, outer apparently wanting; a slight skin fold on heel continued from metatarsal tubercle; the leg brought forward, the tibiotarsal articulation reaches beyond tip of snout; a distinct fold from angle of mouth across breast.

*Color in life.*—Above mottled lavender, darker on head; tubercles on back purplish; below dorsolateral folds and on side of head purplish, darker anteriorly; tympanum brown; throat purplish with yellow spots on jaws and throat; belly yellow to flesh; outer end of femur purplish; palms and soles purplish; limbs above barred with purple.

*Measurements of type of Rana micrixalus sp. nov.*

| | mm. |
|---|---|
| Snout to vent | 28.5 |
| Length of head | 11.5 |
| Width of head at tympanum | 11.5 |
| Diameter of orbit | 3.5 |
| Length of snout | 5.5 |
| Upper eyelid | 2.4 |
| Interorbital distance | 3.6 |
| Forelimb | 18 |
| Longest finger, to wrist | 12.5 |
| Hind limb | 53 |
| Femur | 14.5 |
| Tibia | 17 |
| Longest toe | 14 |

*Variation.*—There are three specimens in the collection from Abung-abung, Basilan, and two from Pasananka, Zamboanga. No. 1598C is light brownish lavender above, with the same color on the sides, growing lighter, and dusted with minute purple blotches; the lores are purplish; the edge of the lower jaw is dark with yellow spots; throat flesh color; anal region dark; limbs barred above with darker lavender. No. 1598B has a dark purplish streak below the dorsolateral fold. The tubercles on the back are indistinct.

The Zamboanga specimens are the younger. In No. 1060 the tubercles on the back are very dim; the throat and chest are dusky. No. 1135 is brownish above, with a dim interorbital bar and a strong V-shaped black spot over the flat tubercles between the shoulders.

*Remarks.*—The species appears to be related to *Rana parva* Taylor and *R. mindanensis* Girard. From *R. parva* it differs in having the broad dorsolateral glandular fold, the more-backward position of the nostril, a rough skin with tubercles, the longer hind leg with the tibiotarsal articulation reaching beyond the tip of the snout, and in the presence of a fold on the breast. From *R. mindanensis* it differs in having a narrower eyelid, a wider interorbital area, and the toes half webbed instead of fully webbed.

In general form this species resembles a species of *Micrixalus*. The presence of the vomerine teeth however makes it a true *Rana*.

The specimens collected were hopping about in the forest, away from the immediate vicinity of water. I failed to find the species in Jolo.

**Rana similis** (Günther).

*Polypedates similis* GÜNTHER, Proc. Zool. Soc. London (1873) 171.
*Rana similis* TAYLOR, Philip. Journ. Sci. 16 (1920) 271.

Numerous specimens of this species were collected on Polillo Island, and on Mount Maquiling, Luzon. They were invariably found near water. They frequent grass and débris along streams and rarely or never enter water to escape pursuit. No eggs or larvæ were found, although a pair of the frogs was found copulating in Polillo early in August, 1920. The largest two specimens taken measure approximately 54 millimeters from snout to vent.

I collected a very immature specimen of *Rana* in northern Kalinga Subprovince, which I believe belongs to this species. The characteristic dorsolateral cream lines are invariably present in all specimens taken.

## LIZARDS

**Hemidactylus garnotii** Duméril and Bibron.

*Hemidactylus garnotii* DUMÉRIL and BIBRON, Erp. Gén. 3 (1836) 368; TAYLOR, Lizards of the Philippine Islands (1922) 56.

Three specimens of this very rare species were collected in southern Ifugao, in an old school building near the forest. It was not encountered elsewhere during my collecting in 1920 and 1921. I have mentioned that I had examined a specimen from Ifugao with preanal pores.[9] This refers to one of the three specimens mentioned above.

All three specimens have femoral pores, thirteen to sixteen on a side. I am still in doubt as to whether this is the true *Hemidactylus garnotii* Duméril and Bibron, which is said to be without femoral or preanal pores. The type locality is Tahiti, and Stejneger's specimens from the Hawaiian Islands presumably included males and females. None of these had pores. It is not improbable that more than one species is represented and that the specimens at hand are not true *H. garnotii* but *H. gaudama* of Theobald. This is a point I cannot decide, having no comparative material at hand.

**Peropus mutilatus** (Wiegmann).

*Hemidactylus mutilatus* WIEGMANN, Herp. Mex. 1 (1834) 54.
*Peropus mutilatus* TAYLOR, Lizards of the Philippine Islands (1922) 62.

I collected this species in practically every locality where collecting was done. It was found under the bark of forest trees, as well as in human habitations. This is the only one of the domestic geckos that I have found in numbers in forests away from human habitations. I believe it one of the "aboriginal" species and not one whose arrival has depended on its dispersal by man.

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[9] Op. cit. 59.

**Cosymbotus platyurus** (Schneider).

*Stellio platyurus* SCHNEIDER, Amph. Phys. 2 (1792) 30.
*Cosymbotus platyurus* TAYLOR, Lizards of the Philippine Islands (1922) 59.

Specimens were obtained from Jolo, Sibuyan, southern Negros, and Manila. The distribution is apparently not general in the Philippines. In my ten years' collecting in the Islands I have never encountered a specimen of this species in the forest away from human habitation.

**Lepidodactylus herrei** sp. nov.

*Type.*—No. 480, Bureau of Science collection; collected March 14, 1922, at Luzurriaga, Oriental Negros, by Albert C. Herre.

*Description of type.*—Snout long, rather conical; rostral low, much broader than high, entering nostril, lowest medially; rostral followed by a large rounded internasal which lies between posterior parts of rostral and supranasal; a second, very small scale also joins rostral on the right side of the large scale; nostril surrounded by a supranasal, two postnasals, first labial and rostral; twelve upper labials; eleven lower labials; four rows of rounded scales on chin, lying anterior to a line drawn across jaw between the sutures of third and fourth labials; mental distinct from labials; about thirty-two rows of longitudinal granules cross snout in front of eye; granules on occiput smaller than those on snout; much smaller than those on back; scales on belly rounded, subimbricate, forming straight longitudinal lines; auricular opening small, rounded; preanal and femoral pores large, in a continuous series, forming a median curved arch, and then curving up on femur from the seventh pore; nineteen pores on right side, twenty on left; in preanal region the pore scales are followed by an angular series of eight enlarged scales which are followed by seven other series of scales that gradually diminish in size to anus; two flattened tubercles at base of tail; tail rounded above, flattened below, with a slight, nonserrate, flattened edge; no spiny scales; annulations not or scarcely evident; the tip of tail with two short regenerated areas; twelve lamellæ under longest finger, a slight web between fingers; thirteen and fourteen lamellæ under longest toes, web between toes somewhat more extensive than that between fingers; no skin fold on leg; anterior lamellæ divided; granules on back as large as or larger than belly scales.

*Color (freshly preserved in alcohol).*—Above light grayish lavender from occiput to tip of tail, the pigment very equally distributed, with no markings evident; yellowish between eyes and on snout; a broad, very well defined cream stripe from nostril to above tympanum, where the stripe begins to narrow gradually and continues along a single row of granules to above insertion of foreleg; stripe edged above and below with darker; side of head and labials whitish; sides of neck with a strong wash of lemon yellow; a wash of lemon yellow from axilla to groin; chin, throat, and belly whitish; underside of tail uniform salmon.

*Measurements of the type of Lepidodactylus herrei sp. nov.*

| | mm. |
|---|---|
| Total length | 97 |
| Snout to vent | 48 |
| Tail | 49 |
| Snout | 5.5 |
| Diameter of eye | 3.5 |
| Eye to auricular opening | 4 |
| Snout to foreleg | 20 |
| Axilla to groin | 22.5 |
| Foreleg | 12.5 |
| Hind leg | 19 |
| Length of head | 14.5 |
| Width of head | 10 |

*Remarks.*—This species is related to *Lepidodactylus aureolineatus* Taylor, but differs in certain salient points. The head is longer and more conical; the line through the eye is wider and more pronounced; the character of the tail is different, lacking the prominent lateral spines which mark the annulations in *L. aureolineatus;* the granules on the back are much larger in comparison to the ventral scales. By count *L. aureolineatus* has approximately 150 to 155 rows of granules and scales about the middle of the body, while *L. herrei* has between 70 and 80, depending on the point where the count is made. I suspect that it is a larger species, since it much exceeds the size of some eleven specimens of *L. aureolineatus* that I have been able to examine.

The single (type) specimen was collected by Dr. Albert C. Herre, chief of the division of fisheries, Bureau of Science. The species is named for its discoverer who very kindly permitted me to describe it.

**Gekko gecko** (Linnæus).

> *Lacerta gecko* LINNÆUS, Syst. Nat. ed. 10, 1 (1758) 205.
> *Gekko gecko* TAYLOR, Lizards of the Philippine Islands (1922) 94.

This common species was collected in Manila and Los Baños, Luzon, and on Jolo Island. It appears to be absent from Kalinga and Polillo. I heard the call of this species many times in the vicinity of the town of Zamboanga, but no specimens were taken. None were seen or heard in the forests to the north of Zamboanga or in Basilan.

In my work on Philippine lizards I suggest that *Gekko gecko* is of comparatively recent introduction since it is seldom found at any considerable distance from human habitation. It is quite unknown in central eastern Mindanao, away from the coasts.

**Draco bimaculatus** Günther.

> *Draco bimaculatus* GÜNTHER, Rept. Brit. India (1864) 127; TAYLOR, Lizards of the Philippine Islands (1922) 126.

This species was collected near Pasananka, Zamboanga, at Abung-abung, Basilan, and on Mount Tumantangis, Jolo.

Most of the Zamboanga specimens were shot from coconut trees. Not infrequently this species and *Draco rizali* were collected from the same tree. In Basilan specimens were collected from the trunks of forest trees. Sometimes three or four specimens were observed in the same tree, particularly in cutover areas where most of the larger trees had been removed. Only a single specimen was collected in Jolo. It was obtained for me by Mr. Alexander Schuck from a large forest tree at an elevation of about 600 meters, on Mount Tumantangis. Mr. Schuck shot it from the tree with a forty-five revolver. The specimen was uninjured save for a broken leg. A specimen of this species was collected at Cabalian, Leyte, by Gregorio Alforo y Lopez.

Males and females agree very well in color save that in the females the throat is crossed by two deep bluish black lines.

**Gonyocephalus interruptus** Boulenger.

> *Gonyocephalus interruptus* BOULENGER, Cat. Liz. Brit. Mus. ed. 2, 3 (1885) 290, pl. 22; TAYLOR, Lizards of the Philippine Islands (1922) 134, pl. 9, fig. 1.

Only an immature specimen of this species was collected. It was found near Pasananka, Zamboanga. The division between dorsal and nuchal crests is distinct, although the crests are very low. There is a distinct dorsolateral row of tubercular scales on the back paralleling the dorsal crest; on the sides there are several enlarged tubercles arranged in irregular transverse rows. The color in life was brownish red above extending low on the sides. The top of the head was brick red; the labials and the area below the eye yellow-green; the tympanum bright yellow; the bars crossing the head yellow; the marks on the back dull yellow to olive; the bars on the tail gray.

It would appear that certain specific characters of Peters's *Gonyocephalus semperi* are incorporated in this specimen. Unfortunately, the species is rare, and it is very difficult to obtain large series from the various islands. It may be that this and Peters's species will have to be united.

**Mabuya bontocensis** sp. nov.

*Type.*—No. 696, E. H. Taylor collection; collected along the Mountain Trail, Bontoc Subprovince, Mountain Province, April, 1920, by Edward H. Taylor.

*Description of type.*—Rostral visible above, much widened at its base; internasals small, widely separated; frontonasal longer than wide, forming a curved suture with rostral; prefrontals rectangular, placed diagonally, separated medially; frontal elongate, more than twice as long as broad, distinctly longer than its distance from end of snout, in contact with frontonasal; frontoparietals distinct, small; interparietal very small, scarcely longer than wide, partially fused with parietals; latter very much broader than deep, followed by a pair of nuchals equally broad and only slightly shorter; nostril in a single nasal, separated from supranasal and first labial by only an extremely narrow rim of the scale; no postnasal; two loreals, the anterior higher but smaller than the second; latter followed by two suboculars; four superciliaries; four supraoculars, the first small, the second very large forming a suture with prefrontal, separating first supraocular from frontal; third and fourth small, not touching frontal; four subequal labials in front of the large labial under eye which is four or more times as long as high; subocular followed by a single small labial; latter separated from parietal by two slightly enlarged temporals; posterior temporal series not or scarcely larger than body scales; anterior edge of nostril on a line with the suture formed by rostral and first labial; mental large, followed by large postmental; six lower labials; two pairs of chin shields, first pair in contact, second pair not or but slightly wider than first pair, separated by a single scale; legs moderately long, the adpressed hind leg reaches or fails slightly to reach elbow of foreleg; twenty-four lamellæ under fifth toe, thirty-two scale rows around body, each scale on back and side with either five or seven keels; belly scales smooth; anals somewhat enlarged; tail very slender, elongate.

*Color in life.*—Above iridescent olive-black, with bluish white to gray lines. There is a median black stripe beginning on parietals and extending to some distance on tail; this is bordered by two grayish white lines which also extend on tail; a dorsolateral yellowish stripe runs from snout along the superciliaries, and on the sides to some distance on the tail; another cream line runs along labials through auricular opening to groin; below this line, separated by a dark stripe, is another white line broken by the foreleg and continuing to groin; below this last line is only a trace of a dark line; belly greenish white; tail growing brownish toward middle; foreleg and hind leg with indistinct spots.

*Measurements of the type of Mabuya bontocensis sp. nov.*

| | mm. |
|---|---|
| Total length | 160 |
| Snout to vent | 60 |
| Tail | 100 |
| Length of head | 15 |
| Width of head | 9 |

There is little or no variation in the coloration. The interparietal is invariably small, never separating the parietals; in two specimens it is only partially distinct from the parietals; in the other specimens the parietals are injured, and the condition of the interparietal cannot be determined. The following table gives the variation in scale counts:

*Scale counts in specimens of Mabuya bontocensis sp. nov.*

| No. | Locality. | Scale rows. | Superciliaries. | Lamellæ, under fourth toe. |
|---|---|---|---|---|
| 350 | Baguio, Mountain Province | 30 | 4 | 23-24 |
| 694 | Subangan, Bontoc Subprovince | 30 | 4 | 23-24 |
| 705 | Near Bontoc, Bontoc Subprovince | 30 | 4 | 23-24 |
| 722 | do | 30 | 4 | 24 |

*Remarks.*—This species belongs to the *Mabuya multicarinata* Gray group. It differs from that species in coloration and markings and appears to be smaller. There are fewer superciliaries; the anterior loreal is much higher than the second one; the interparietal is much smaller, not separating parietals and partially fused with them.

The present species was found to occur from Baguio, along the Mountain Trail, to northern Kalinga. It is probably confined to the plateau and mountain region of northern Luzon. It is not uncommon, and specimens were seen moving about on the cliffs that border the trail.

In a previous work[10] I mention a young specimen collected in Baguio; this is No. 350, listed in the table.

### Otosaurus cumingii Gray.

*Otosaurus cumingii* GRAY, Cat. Liz. (1845) 93; TAYLOR, Lizards of the Philippine Islands (1922) 163, pl. 13, fig. 2, and text fig. 16.

Three specimens of this large skink were collected; two on Calotcot, a small island in the Polillo group, and one on Mount Maquiling, Laguna Province, Luzon.

The Calotcot specimens were shot from forest trees, one specimen at an elevation of about 13 meters. Others were observed in trees. Nowhere else have I ever found this species in trees, as it is, in localities where I have previously collected it, terrestrial in habit and lives for the most part under rocks and in holes in the ground. It will be noted, from the table herewith given, that the Luzon specimen, like those from Bataan Province, Luzon,[11] has a much higher average of scale rows than have those from Calotcot and Mindanao. With larger series it may be possible to separate this form having the high scale count from the typical one.

*Measurements and scale counts of Otosaurus cumingii Gray.*

| No. | Locality. | Length, snout to vent. | Tail. | Upper labials. | Lower labials. | Supra-oculars. | Lamellæ under fourth toe. | Scale rows. | Super-ciliaries. |
|---|---|---|---|---|---|---|---|---|---|
| | | *mm.* | *mm.* | | | | | | |
| 197 | Calotcot | 135 | 220 | 8 | 8 | 8-9 | 27-29 | 52 | 16 |
| 198 | do | 134 | [a]174 | 9 | 8 | 7-8 | 27-79 | 54 | 16 |
| 1919 | Los Baños | 107 | ([b]) | 9 | 8 | 7 | 26 | 60 | 13-14 |

[a] Tail regenerated. [b] Tail broken and lost.

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[10] Lizards of the Philippine Islands (1922) 153.

[11] Taylor, loc. cit. 165.

**Sphenomorphus decipiens (Boulenger).**

*Lygosoma decipiens* BOULENGER, Proc. Zool. Soc. London (1894) 734, pl. 49, fig. 3.

*Sphenomorphus decipiens* TAYLOR, Lizards of the Philippine Islands (1922) 176, pl. 15, fig. 2.

I collected specimens of this species in Kalinga, northern Luzon, and on Polillo Island. Good series were taken in each locality. The frenals are normal in specimens from both localities, and show no variation. The scale rows of the Kalinga specimens number thirty-four or thirty-six. A single specimen has numerous spots on the chin and throat.

The species appears to be common in the two localities mentioned. Specimens are encountered moving about through the forest or under leaves where they feed on small insects. The type locality is Isabela Province, northern Luzon.

**Sphenomorphus curtirostris Taylor.**

*Sphenomorphus curtirostris* TAYLOR, Philip. Journ. Sci. § D 10 (1915) 101; Lizards of the Philippine Islands (1922) 170, pl. 14, fig. 3, and text fig. 18.

A number of specimens belonging to this species was collected at Los Baños, and low on the sides of Mount Maquiling, Laguna Province. They agree very well with the type, which comes from central eastern Mindanao.

Each of the ten specimens agrees with the type in having the frenals normally broken into two parts and superimposed. The chin and throat in the males are blue-black, minutely dotted with white. This marking extends on the sides of the head and neck. There is a distinct white line above the tympanum from the eye to near the insertion of the arm. The species is not rare at low elevations on Maquiling.

**Sphenomorphus atrigularis Stejneger.**

*Sphenomorphus atrigularis* STEJNEGER, Proc. U. S. Nat. Mus. 34 (1908) 199, figs. 1 and 2; TAYLOR, Lizards of the Philippine Islands (1922) 196.

I have referred to this species a series of specimens collected at Zamboanga and Basilan. There are a number of differences between these and the type specimen, but they agree for the most part in color and marking and in most of the essential scale characters. Judging by Stejneger's figure, the head of the type appears somewhat lower than in my specimens, and the arrangement of the loreals is different, save in a single specimen.

The loreal elements in the small Philippine skinks are variable, and in this series of specimens practically no two can be found that are identical. Several have two well-defined loreals followed by two or three small superimposed preoculars; others have a large anterior loreal followed by two superimposed loreals; one specimen has a large anterior loreal separated from the upper preocular by the tip of the prefrontal scale. The size of the loreals varies also. Sometimes the anterior is larger, sometimes the posterior. The nasal varies in size. The dorsolateral black streak is rarely a distinct continuous line, but is usually a series of irregular spots; the light streak above this dark line, on the anterior part of the body, is almost invariably evident. The temporals are all small. There is practically no difference among the specimens in the scalation of the top of the head.

All female specimens seem to have the dark marking on the throat and chin wanting. Males have the throat deep blue-black. The brown color on the back varies from light yellow-brown to deep blackish brown.

Sixteen specimens were collected. They were found moving about through the forest.

**Sphenomorphus steerei Stejneger.**

*Sphenomorphus steerei* STEJNEGER, Proc. U. S. Nat. Mus. 34 (1908) 201, figs. 3 and 4; TAYLOR, Lizards of the Philippine Islands (1922) fig. 23.

I collected more than twenty-five specimens of this diminutive species about the base of Mount Maquiling, Luzon, and a single specimen on Polillo Island. Others were seen in the forest of Polillo, but they escaped capture. The species was obtained in southern Leyte by Lopez.

**Sphenomorphus biparietalis Taylor.**

*Sphenomorphus biparietalis* TAYLOR, Philip. Journ. Sci. § D 13 (1918) 249; Lizards of the Philippine Islands (1922) 177.

Thirty-five specimens of this diminutive species were collected on Jolo Island. All agree with the type in general conformation of the head scales and in coloration. In the type description I mention a specimen from Basilan and call attention to its different markings, broader head, and greater number of scale rows. I am convinced that this specimen represents a variation of *Sphenomorphus atrigularis* Stejneger. Unfortunately, the specimen is no longer at hand for direct comparison.

Specimens were taken under logs, leaves, and trash, and moving about in the forest. It is a common form on Jolo and the Sulu islands to the south.

**Sphenomorphus stejnegeri sp. nov.**

*Type.*—No. 16, E. H. Taylor collection; collected on Mount Banahao, Laguna Province, Luzon, May 30, 1920, by Edward H. Taylor.

*Description of type.*—Rostral visible above, forming a broad suture with frontonasal; latter much broader than deep, touching anterior frenal laterally; prefrontals broader than deep, broadly in contact; frontal much longer than broad, longer than its distance from tip of snout, not as broad as supraocular region; frontoparietal single, broader than deep; interparietal small, triangular; parietals large, forming a suture behind interparietal; a small nuchal scale on one side (may be abnormal and due to a fusion of two body scales); nostril in a single nasal; large anterior frenal, followed by two superimposed frenals, of which the lower is much the larger; two or three small preoculars; two rows of small irregular suboculars; eight superciliaries, the anterior large, touching frontal; four supraoculars, the last barely in contact with parietal, anterior separated from prefrontal; three pairs of small scales separate parietal and temporals from orbit; two inferior temporals small; three superior temporals much enlarged, the anterior largest, very broad, followed by two greatly elongated vertical temporals; scales following these also enlarged; an elongate temporal bordering parietal separates the two elongate scales from parietal; seven upper labials, fourth lowest, with two enlarged suboculars immediately above it; mental broader than rostral, followed by a broad deep postmental; three pairs of chin shields, the anterior pair in contact, second pair separated by a single scale, third pair by four scales; auricular opening large, the tympanum not deeply sunk; thirty-two scale rows around middle of body, scales on side very distinctly smaller than ventrals or dorsals; limbs moderately well developed, the adpressed limbs meeting on the side, fourth toe very much longer than third, with fourteen lamellæ on undersurface.

*Color in life.*—Above dark variegated brown with a median series of dark blackish spots separated by yellowish brown spots; a broad dark streak from eye to some distance on tail, edged above anteriorly by a very narrow yellow-brown line; the streak is broadest and darkest on the side of the neck and above the foreleg; below this streak dirty flesh color, becoming pinkish on the belly; chin and throat with dim dusky flecks; top of head olive brown with dark scattered spots; loreal region spotted black; labials with dim yellowish spots; a yellowish streak from eye to above auricular opening below the dark streak; tail nearly uniform above, on sides with very indistinct minute markings of cream; underside pink.

*Measurements of the type of Sphenomorphus stejnegeri sp. nov.*

| | mm. |
|---|---|
| Total length | 66 |
| Snout to vent | 27 |
| Snout to foreleg | 10 |
| Axilla to groin | 14 |
| Foreleg | 9 |
| Hind leg | 6 |

*Remarks.*—In the character of the temporals this species differs from other Philippine species that have the undivided frontoparietal. The specimen is apparently immature, but I believe it is a diminutive species.

The single specimen, the type, was found on Mount Banahao, at an elevation of about 1,000 meters. The species is named for Dr. Leonhard Stejneger, the eminent herpetologist of the United States National Museum, Washington, D. C.

### Sphenomorphus fasciatus (Gray).

*Hinulia fasciata* GRAY, Cat. Liz. (1845) pl. 15, fig. 2.

*Sphenomorphus fasciatus* TAYLOR, Lizards of the Philippine Islands (1922) 188, pl. 12, fig. 3.

I found two eggs of this species, containing fully developed embryos, on September 24, 1920, in a rotten log near Pasananka, Zamboanga. The embryos have the belly tinged with salmon; above they are black, and the dotted transverse bars are milk white; the top of the head is reddish.

An adult was taken September 29, 1920, not far from where the eggs were found. The belly is yellow anteriorly and pink to orange posteriorly. The transverse bars on the body are yellow-brown, on the tail milk white. An adult male specimen was collected on the seashore at Isabela, Basilan. The bars above on the body are golden brown, the throat is flesh color. A dull yellow wash covers the belly, and pink areas are present under limbs and about anus.

I believe this species is confined to Mindanao and neighboring islands.

**Sphenomorphus variegatus (Peters).**

*Lygosoma (Hinulia) variegatum* PETERS, Mon. Berl. Ak. (1867) 20.
*Sphenomorphus variegatus* TAYLOR, Lizards of the Philippine Islands (1922) 184.

This species was collected at Zamboanga; at Port Holland and Abung-abung, Basilan; and at various localities on Jolo. The species occurs commonly in Mindanao and Sulu. I have stated[12] that the type locality is the Philippines. This is only a supposition, since Peters does not specifically so state and in his paper[13] treats certain species that are not Philippine. It is, however, very probably the type locality, and it would be a matter for wonder if the species was not collected by Semper, who collected for Peters, since it is very common wherever it occurs in the Islands.

No specimen has yet been collected on Palawan, although it occurs in Borneo. I collected it on Cagayan Sulu, a small island north of Borneo. It probably occurs also on Leyte and Samar, but not farther north.

**Leiolopisma pulchellum (Gray).**

*Lipinia pulchella* GRAY, Cat. Liz. (1845) 84.
*Leiolopisma pulchellum* TAYLOR, Lizards of the Philippine Islands (1922) 212, pl. 15, fig. 5.

Specimens of this diminutive species were collected on Polillo and on Mount Maquiling, Laguna Province, Luzon. The specimens agree with each other very well in color and markings, but differ in certain important scale characters.

*Table of measurements and scale counts of Leiolopisma pulchellum (Gray).*

| No. | Locality. | Collector. | Length, snout to vent. | Supraoculars. | Scale rows. | Lamellæ under longest toe. |
|---|---|---|---|---|---|---|
| | | | *mm.* | | | |
| 278 | Polillo | E. H. Taylor | 43 | 5 | 24 | 24 |
| 278A | do | do | 40 | 5 | 22 | 24 |
| 279 | do | do | 42 | 5 | 24 | 23 |
| 279A | do | do | 36 | 5 | 24 | 23 |
| 279B | do | do | 40 | 4 | 24 | 25 |
| 281 | do | do | 38 | 5 | 24 | 25 |
| 283 | do | do | 44 | 5 | 24 | 22 |
| 284 | do | do | 40 | 5 | 24 | 22 |
| 383 | do | do | 40 | 4 | 24 | 24 |
| 1914 | Los Baños | do | 38 | 4 | 20 | 24 |
| 1915 | do | do | 40 | 4 | 22 | 23 |
| 1916 | do | do | 42 | 4 | 22 | 24 |

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[12] Loc. cit.

[13] Loc. cit.

The table shows the principal variations. The number of supraoculars is variable. The type has only four supraoculars.[14]

In the type the hind leg is said to reach the axilla. I found this to be the case in only very young specimens. None of the specimens listed here has the toes of the hind leg reaching much beyond the elbow of the adpressed foreleg. All the specimens agree with the type in color.

**Tropidophorus grayi** Günther.

*Tropidophorus grayi* GÜNTHER, Proc. Zool. Soc. London. (1861) 189; TAYLOR, Lizards of the Philippine Islands (1922) 236.

This species was found to be very common on Polillo Island, but is apparently absent from Calotcot Island, lying east of Polillo. The latter condition is probably due to the fact that there is no standing or running water on the island. A few specimens were obtained on Mount Maquiling and on Mount Mariveles. Gregorio Alforo y Lopez collected a single specimen of the species at Cabalian, Leyte.

*Measurements and scale counts of Tropidophorus grayi Günther.*

| No. | Locality. | Collector. | Scale rows. | Lamellæ under fourth toe. |
|---|---|---|---|---|
| 335 | Polillo | E. H. Taylor | 28 | 17 |
| 1886 | Los Baños | do | 26 | 17 |
| 0000 | Leyte | G. Lopez | 26 | 22 |

One small specimen has five instead of four labials preceding the large subocular labial on one side. The same specimen also has each frontoparietal broken into two scales. The Leyte specimen differs from the specimens from Polillo and Los Baños in having slightly longer toes with five more lamellæ than the average for the more northern specimens. The height of the spiny keels on the neck and back is distinctly greater.

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[14] Boulenger, Cat. Liz. Brit. Mus. ed. 2, 3 (1887) 254, states that the supraoculars are 5. The drawing, pl. 17, fig. 1, leads me to believe that the "first very small" supraocular should be regarded as a superciliary.

**Tropidophorus rivularis Taylor.**

*Tropidophorus rivularis* TAYLOR, Philip. Journ. Sci. § D 10 (1915) 106; Lizards of the Philippine Islands (1922) 240, pl. 21, fig. 2.

A large series of this species was collected along the Tumugao River, Zamboanga, and at Abung-abung, Basilan. The lizards were invariably found along small rivers or brooks, usually under partly submerged logs or stones. They generally entered the water to escape pursuit.

Among the lot of about fifty specimens are numerous large females containing embryos. One female contains five embryos which measure approximately 90 millimeters in length, with a snout-to-vent measurement of 35 millimeters. The longest adult specimen in the collection (No. 1081 from Zamboanga) measures 260 millimeters in length; snout to vent, 108.

Most of the older specimens have the throat coal black with a few scattered white spots, and the belly a deep red-orange. Above they are dull blackish to olive, variegated with dim traces of transverse bars. This species and the recently described *Tropidophorus stejnegeri* are closely related, but distinct. Both were taken in the same general localities, save that *T. stejnegeri* was always found in the forest and mountains away from water.

**Brachymeles eleræ Taylor.**

*Brachymeles eleræ* TAYLOR, Philip. Journ. Sci. § D 12 (1917) 273, figs. 4 and 5; Lizards of the Philippine Islands (1922) 254.

Two specimens were collected at Balbalin, Kalinga Subprovince, which I have referred to this species. They agree with the type specimen in general. However, the internasals appear to be somewhat larger, and the prefrontals are narrowly in contact, separating the prefrontal from the frontal; the frontoparietals are also in contact; the arrangement of the chin shields is the same as in the cotype.[15]

The preanals appear to be somewhat smaller than in the type. One of the specimens has no digits on one hind leg, due to an old injury. The length of the longest toe is about 0.5 millimeter; of the longest finger about 0.25 millimeter; the distance between the snout and the insertion of the foreleg is contained in the axilla-to-groin distance three and seven-tenths times; the length of the hind leg is contained in the axilla-to-groin distance nine and four-tenths times.

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[15] Taylor, loc. cit. fig. 5.

*Measurements of Brachymeles eleræ Taylor.*

| | No. 855.<br>mm. | No. 856.<br>mm. |
|---|---|---|
| Total length (tail regenerated) | 111 | [a]73 |
| Snout to foreleg | 14 | 16 |
| Snout to vent | 69 | 71.5 |
| Axilla to groin | 52 | 55 |
| Foreleg | 3.3 | 3.4 |
| Hind leg | 5.5 | 5.6 |
| Width of head | 6 | 6.4 |
| Snout to posterior part of parietal | 7 | 7 |

[a] Tail wanting.

*Variation.*—The second specimen, taken in the same immediate locality, is a female containing embryos. No variation of importance is noted.

*Remarks.*—The type of this species is now in the Santo Tomas Museum, Manila. The type locality is no longer known.

At Balbalin, Kalinga Subprovince, no other species of *Brachymeles* were found, but in the low country around Payao, Ifugao Subprovince, two species, *B. boulengeri* and *B. burksi*, were collected.

One species of the genus, *Brachymeles bicolor*, is as yet without definite locality records. It is probable, however, that it is also a Luzon species.

## SNAKES

**Typhlops braminus** (Daudin).

*Eryx braminus* DAUDIN, Hist. Nat. Rept. 7 (1803) 279.
*Typhlops braminus* TAYLOR, Snakes of the Philippine Islands (1922) 50.

Specimens of this species were obtained in Polillo, Los Baños, Basilan, and Jolo. The specimens are typical. The species is apparently very common on Jolo. It appears to be rare in other localities.

**Natrix auriculata** (Günther).

*Tropidonotus auriculatus* GÜNTHER, Cat. Col. Snakes (1858) 80.
*Natrix auriculata* TAYLOR, Snakes of the Philippine Islands (1922) 89.

This species was collected only in Zamboanga and Basilan. In both localities it was found along streams and rivers, in moist situations.

There are several specimens in the British Museum listed by Boulenger from Pasananka. Most of my Zamboanga specimens are from near the same locality. I note no differences of any importance between the specimens from this locality and those from Basilan, save that several of the Zamboanga specimens (Nos. 1078, 1079A, 1095, 1096) have the preocular broken into two parts, and a few have a single anterior temporal. Nos. 1079A and 1045 from Zamboanga and Nos. 1379 and 1586 from Basilan have single anterior temporals. One or two more specimens, show this character on one side only. The largest and smallest among twenty-one specimens in the collection measure as follows: No. 1097, Zamboanga, total length, 560 millimeters; tail, 170. No. 1101, Zamboanga, total length, 149 millimeters; tail, 41. Variations in color and markings are due chiefly to age. This is the smallest *Natrix* in the Philippines.

**Cyclocorus nuchalis** sp. nov. Plate 3, figs. 1, 2.

*Type.*—No. 1428, E. H. Taylor collection; collected at Pasananka, Zamboanga, September 30, 1920, by Edward H. Taylor.

*Description of type.*—(Male.) Rostral very much broader than high, not or very narrowly visible from above; internasals small, broader than long; prefrontals moderately large, in contact for at least three-fourths of their length, rounded behind, much broader than long; frontal shield-shaped, the sides nearly parallel, twice as long as wide, only slightly wider than supraocular; parietals one and one-fourth times as long as wide, touching both postoculars and bordered by three temporals, their mutual suture equal to the length of the frontal; nasal apparently partially divided on one side, wholly on the other; loreal very small, slightly larger than lower preocular; two preoculars, the upper three times as large as the lower; two postoculars subequal in size; one anterior temporal, followed by two, then three temporals; seven supralabials, third and fourth entering orbit; diameter of eye distinctly greater than distance of eye to edge of mouth; eight lower labials, last very small, the three anterior ones touching anterior chin shields; posterior chin shields longer than anterior, in contact the greater part of their length; scales in seventeen rows without or with only very dim apical pits; ventrals, 133; anal, single; subcaudals, 58.

*Color in life.*—Dull brownish on anterior part of body, dark black-brown on posterior part. A median black stripe begins on neck and continues to tip of tail, very dimly evident on anterior part of body; a broad black spot on neck beginning three scales behind parietals; on the latter third of body and tail a black stripe on either side, not or but dimly visible on middle third; head with a black parietal spot which connects from Basilan, save that several of the Zamboanga specimens (Nos. 1078, 1079A, 1095, 1096) have the preocular broken into two parts, and a few have a single anterior temporal. Nos. 1079A and 1045 from Zamboanga and Nos. 1379 and 1586 from Basilan have single anterior temporals. One or two more specimens, show this character on one side only. The largest and smallest among twenty-one specimens in the collection measure as follows: No. 1097, Zamboanga, total length, 560 millimeters; tail, 170. No. 1101, Zamboanga, total length, 149 millimeters; tail, 41. Variations in color and markings are due chiefly to age. This is the smallest *Natrix* in the Philippines.

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*Measurements of the type of Cyclocorus nuchalis sp. nov.*

| | mm. |
|---|---|
| Total length | 444 |
| Tail | 118 |
| Width of head | 16 |
| Length of head | 17 |

*Variation.*—A second specimen in my collection from Abungabung, Basilan, agrees with the type in essential details; the fourth lower labial, however, touches the first pair of chin shields, and the posterior chin shields are slightly shorter and separated for the greater part of their length; a row of cream dots can be traced on the sides, touching the fourth and fifth scale rows, the scales bearing dots, separated by two vertical scale rows. The posterior part of the body is less black and the lateral dark lines are very dim. The lateral light dots are discernible also in the type on very close observation; ventrals, 144; subcaudals, 45; anal, single.

*Remarks.*—This species differs from *Cyclororus lineatus* (Reinhardt) in having seven instead of eight upper labials; in having the third and fourth instead of the third, fourth, and fifth upper labials entering the orbit; in having shorter and wider parietals; and in having larger eyes.

In my monograph on Philippine snakes[16] I list a series of *Cyclocorus lineatus* from Mindanao. The specimens are not at hand for study at present, but they have a lower number of ventral scales and a higher average of subcaudals than do species occurring in northern islands; three instead of four or five lower labials is the usual number that border the anterior chin shields and the temporal formula is 1 + 2. The present species has the same temporal formula as the Mindanao specimens and there are three or four labials bordering the first chin shields. I strongly suspect that the group of specimens listed from Mindanao should be regarded as distinct from *C. lineatus*, and perhaps joined to this species.

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[16] Snakes of the Philippine Islands (1922) 108.

The color markings on the head are very different from those in *Cyclocorus lineatus*. I collected only the two specimens.

There is a single young specimen in the collection of the Bureau of Science, without locality data, which agrees with the type in general details. It differs slightly in color and in that there is a distinct band, between the eyes, connected with the nuchal spot by an irregularly edged line; the second chin shields are shorter than the anterior; two labials enter the eye, and there are but seven upper labials; ventrals, 130; subcaudals, 59; the median dark stripe is bordered by two broad lighter areas.

**Cyclocorus lineatus** (Reinhardt).

*Lycodon lineatus* REINHARDT, Kongl. Danske Vid. Selsk. Afhandl. 10 (1843) 241, pl. 1, figs. 7–9.

*Cyclocorus lineatus* TAYLOR, Snakes of the Philippine Islands (1922) 106.

In my treatment of this species I apparently confused certain specimens of *Cyclocorus lineatus* with *C. nuchalis* sp. nov.; the species herein described. The young specimen mentioned[17] is undoubtedly a specimen of the latter species, as are probably certain others listed in the table;[18] at least, if not identical, I believe they must represent a third species characterized by the temporal formula 1 + 2, the three lower labials touching the chin shields, the three labials entering the eye, and the tail being longer than in *C. lineatus*. They are probably more closely related to *C. nuchalis* than to *C. lineatus*.

Unfortunately, the specimens are in the Carnegie Museum, and at present not available to me for study. In consequence I hesitate to name the eastern Mindanao specimens.

The characteristic marking on the head of true *Cyclocorus lineatus* takes the form of a line from the frontal to the neck that is widened between the eyes and forks into three indistinct branches which continue as distinct or broken lines to the tip of the snout; the nuchal band is a V- or a U-shaped mark which crosses the median line five or six scales behind the parietals, and the branches run forward to the posterior temporals where they are joined by two dark lines that begin at the eye. The light line on the labials usually turns and goes from the angle of the mouth up to the median dark line behind the U-shaped mark. The three or four scale rows on either side of the median dark stripe vary from brownish cream in the young to dark brown in the adults; in many specimens the stripes can scarcely be distinguished from the lateral coloration which is a purplish or lavender-brown.

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[17] Op. cit. 108.

[18] Loc. cit.

Only one specimen in the Bureau of Science collection from southern Negros has a single anterior temporal, but the second temporal is separated from the postoculars by only a very short distance. A second specimen from the same locality has the temporal formula 2 + 2, which is the normal one. Fourteen specimens in my collection are from the following localities: Balbalin, Kalinga Subprovince; Polillo Island; Los Baños, Laguna Province; and Oriental Negros.

**Hurria rynchops** (Schneider).

*Hydrus rynchops* SCHNEIDER, Hist. Amph. 1 (1799) 246.
*Hurria rynchops* TAYLOR, Snakes of the Philippine Islands (1922) 111.

There appear to be two varieties of this species, characterized by the presence of two or three prefrontals. The specimens in my own collection and in that of the Bureau of Science vary as follows:

Specimens from Bantayan (29), Negros (2), Jolo (2), Leyte (1) have only two prefrontals, with the anterior labial not broken, leaving a "subnasal" scale.

Specimens from Los Baños (2), Luzon (5), Manila (4), Polillo (1), Camiguin, Babuyan Islands (1) have the anterior labial broken, leaving a "subnasal," a median prefrontal, making a total of three prefrontals. Save for this character I have not discerned any stable character which is constant throughout the two groups of specimens. There are differences in color, but these are not constant.

With my limited material I have hesitated to name the Luzon form. If the variation occurs throughout the island, it would be worthy of designation by name. If Gray's *Cerberus unicolor* described from the Philippines belongs to this form, that name will be applied to the form. The name would fit the coloration of the Luzon form. However, my specimens from Jolo having only two prefrontals are also uniformly colored. So it is difficult to say to which of the above-mentioned groups *C. unicolor* should be assigned.

**Hurria microlepis** (Boulenger).

*Cerberus microlepis* BOULENGER, Cat. Snakes. Brit. Mus. 3 (1896) 18, pl. 2, fig. 2.

*Hurria microlepis* TAYLOR, Snakes of the Philippine Islands (1922) 114, pl. 6, figs. 1–3.

I have been able to examine a series of specimens belonging to this species collected in or near Lake Buhi, Ambos Camarines Province, southern Luzon. The specimens agree fairly well with Boulenger's description and figure. There is, however, considerable variation evident in the four specimens from the same immediate locality. The scale rows vary from 27 to 33. In two specimens the prefrontals touch the nasals, in two they do not. Ventrals vary between 163 and 168, and subcaudals between 60 and 67.

The most important character, it seems to me, and one which is not mentioned in the type description, is the character of the scales. Each scale has numerous small pits or rugose spots; the scales of the head and neck are thickly covered with these, while the costal scales have them arranged around the outer posterior borders. A small low keel is evident on all but the two or three outer costal scale rows.

The ventral scales have two or three very irregular rows of pustules, or pits, crossing their middle transversely. In coloration there is much variation. The ground color varies between gray and brown, with numerous irregularly placed black spots; there is a dark streak along the canthi, passing through the eye to the angle of the jaw or continuing some distance on the neck; three black stripes that begin in the occipital region continue some distance on the neck. These neck markings may be very distinct or almost wanting; the outer three costal scale rows are cream colored without markings, or heavily spotted. The belly is marked by a narrow or a broad irregular longitudinal stripe, or spotted and mottled irregularly.

In my work on Philippine snakes[10] I mention the head of a specimen supposed to be of this species, from Camiguin, Babuyan Islands. I have compared it with these specimens of *Hurria microlepis* and am convinced that it does not belong to that species.

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[10] Snakes of the Philippine Islands (1922) 114.

*Measurements and scale counts of Hurria microlepis (Boulenger).*

| No. | Collection. | Sex. | Length. | Tail. | Ventrals. | Subcaudals. | Scale rows. | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Neck. | Body. |
| | | | *mm.* | *mm.* | | | | |
| 2082 | E. H. Taylor | ♂ | 810 | 163 | 166 | 67 | 27 | 27 |
| 2083 | do | ♂ | 760 | 153 | 163 | 65 | 29 | 29 |
| 852 | Bureau of Science | ♂ | 800 | 140 | 166 | 62 | 30 | 31 |
| 855 | do | ♂ | 810 | 150 | 168 | 60 | 31 | 33 |

| No. | Upper labials.[a] | Lower labials. | Labials touch first chin shields. | Labials touch loreals. | Prefrontals. | Prefrontal touches nasal. | Suboculars. | Preoculars. | Postoculars. |
|---|---|---|---|---|---|---|---|---|---|
| 2082 | 9-10 | 11 | 4 | 4 | 2 | No | 2-1 | 1 | 1 |
| 2083 | 8 | 10-11 | 4 | 3, 4 | 2 | No | 2 | 1-2 | 2 |
| 852 | 8 | 11-10 | 3 | 3 | 2 | Yes | 3 | 1 | 1 |
| 855 | 8 | 10 | 4 | 3 | 2 | Yes | 3-2 | 1 | 2 |

[a] Small scales bordering mouth angle not counted.

## Holarchus ancorus (Girard).

*Xenodon ancorus* GIRARD, Proc. Acad. Nat. Sci. Philadelphia (1857) 182.

*Holarchus ancorus* TAYLOR, Snakes of the Philippine Islands (1922) 140.

*Measurements and scale counts of Holarchus ancorus (Girard).*

| No. | Locality. | Collector. | Age or sex. | Length. | Tail. | Ventrals. | Subcaudals. |
|---|---|---|---|---|---|---|---|
| | | | | *mm.* | *mm.* | | |
| 934 | Balbalin, Kalinga | E. H. Taylor | ♂ | 520 | 85 | 162 | 43 |
| 935 | do | do | ♂ | 435 | 77 | 155 | 41 |
| 36 | Los Baños, Laguna | do | ♂ | 455 | 73 | 162 | 40 |
| 37 | do | do | yg | 182 | 25 | 165 | 43 |
| 38 | do | do | yg | 285 | 46 | 159 | 45 |

| No. | Anals. | Spots. | Upper labials. | Lower labials. | Labials enter eye. | Labials touch chin shields. | Temporals. |
|---|---|---|---|---|---|---|---|
| 934 | 1 | 21 | 7 | 7 | 3 and 4 | 4 | 1+2 |
| 935 | 1 | 18 | 7 | 7 | 3 and 4 | 4 | 1+2 |
| 36 | 1 | 19 | 7 | 6-7 | 3 and 4 | 3 | 1+2 |
| 37 | 1 | 16 | 7 | 8 | 4 | 4 | 1+2 |
| 38 | (?) | 19 | 7 | 7 | 4 | 4 | 1+2 |

Five specimens are in the collection; two were collected at Balbalin, Kalinga Subprovince, and three are from Los Baños, Laguna Province.

The preoculars are normal in all save No. 38, which has two preoculars instead of one on the left side.

The three adult specimens are dark lavender with a median salmon line and purplish crossbars. The belly is pink. The crossbars are lavender to purple, black-edged. No. 934 has considerable dark marking on the posterior half of belly and under tail.

### Calamaria polillensis sp. nov.

*Type.*—No. 341A, E. H. Taylor collection; collected at Polillo, Polillo Island, July, 1921, by Edward H. Taylor.

*Description of type.*—Rostral higher than broad, well visible above, the part visible triangular in shape; prefrontals broader than long, pointed anteriorly, touching two labials laterally; frontal one and three-fourths times as long as broad, at least twice as wide as supraoculars and more than one and three-fourths times as long; parietals longer than wide, only a little longer than frontal; one small scale inserted between parietals at posterior part; parietals followed by two transversely widened scales, separated by a single scale; nasal triangular, minute; six upper labials, third and fourth entering eye; a small elongated preocular; one postocular; one posterior temporal bordering parietal; scales in 13 rows; eye small, rather longer than high, higher than its distance from mouth; ventrals, 131; subcaudals, 19.

*Color in life.*—Above olive, growing rather brownish on the anterior part of body, each scale edged with a darker color; head yellowish brown; the supraoculars darker; outer edge of parietals whitish with an indistinct darker marking; labials yellow save for a very slight edge of brown above; the yellow color almost forms a band behind parietals; on neck a brown spot, each of the outer scales of those that form the spot with a black area; this followed by a yellow ring about the width of two transverse scale rows; the scales following the band each with a black spot; none or only a very few dark spots scattered on body; outer scale row with cream spots; chin, throat, and anterior ventrals immaculate yellow; the following ventrals with a few scattered dots which form very indistinct transverse lines on some ventrals; a zigzag dark line on subcaudals.

*Measurements of the type of Calamaria polillensis sp. nov.*

| | mm. |
|---|---|
| Total length | 180 |
| Snout to vent | 162 |
| Tail | 18 |
| Width of head | 4.5 |
| Length of head | 0.8 |

*Variation.*—The four cotypes are females and differ from the type in a higher average of ventrals (145 to 149) and a lower average of subcaudals (16 or 17). The females have the ventrals, beginning at the twelfth, each with a dark bar. The body is more strongly marked with blackish dots than in the type. These dots are not arranged in longitudinal lines. There is a suggestion of a third neck band on some of the specimens. The scale counts of the four cotypes are: No. 341B, ventrals, 149; subcaudals, 16; No. 341C, ventrals, 145; subcaudals, 17; No. 341D, ventrals, 145; subcaudals, 16; No. 341E, ventrals, 145; subcaudals, 16.

*Remarks.*—This species is related to *Calamaria hollandi* sp. nov. and to *C. gervaisii* Duméril and Bibron. From the former it differs in the shape of the rostral, in the presence of dark bars on the ventrals, and in the color and markings on the head; the counts of ventrals and subcaudals are nearly the same, there being only three less ventrals and two more subcaudals.

From *Calamaria gervaisii* it differs in lower ventral and subcaudal counts, in the presence of the neck ring, and in the different color and markings. From *C. tropica* it differs in the absence of the loreal scale.

The specimens were collected under rubbish in the Old Catholic Church within the walled town of Polillo. The church, which has suffered from earthquake, has a dirt floor. Aside from the *Calamaria*, I collected in this church three species of amphibia; five other species of snakes; eight species of birds; and four mammals, one of which was a wildcat, *Viverra tangalang* Gray. The church is still used as a place of worship.

### Calamaria hollandi sp. nov.

*Type.*—No 1255, E. H. Taylor collection; collected at Port Holland, Basilan, October, 1920, by E. H. Taylor.

*Description of type.*—Rostral about as broad as high, only a small portion visible above; prefrontals a little broader than long; frontal one and a half times as long as broad, about twice as broad as supraocular and much longer; parietals longer than frontal, much longer than broad; scales bordering parietals enlarged, separated behind parietals by a small scale inserted between parietals at posterior part; nostril in a single very small nasal; a single narrow preocular, three times as long as wide; a small postocular a little higher than wide; five labials, last very large, third and fourth entering orbit; first and second labials touch prefrontal, second and third touch preocular, fourth and fifth touch postocular; one large posterior temporal; mental small, about as wide as rostral at its base; anterior chin shields very large, touching mental and three lower labials; second pair of chin shields much narrower and about two-thirds the length of anterior pair, separated save in anterior part by a single scale, separated from ventrals by three small scales; five lower labials, fifth separated from first ventral by four scales; scales smooth, in 13 rows; ventrals, 134; anal, single; subcaudals, 17; tail ending in a rather sharp point.

*Color in life.*—Above olive-brown with the sutures between scales rather darker, and three broken rows of dark dots, one on the median row, and one on the row third from the median; the two scale rows below that bearing the dark dots have small cream-white dots separated by brown coloring; the outer scale row has an unbroken white line on the anterior part of body and on the latter half each scale has a white dot; a brownish line borders the edge of the ventrals; belly and underside of tail immaculate; head almost uniform black-brown; heavy black spots on the labial sutures and on fifth labial; lower labials with black spots; a black-edged cream band crosses neck, separated from parietals by six scale rows.

*Measurements of Calamaria hollandi sp. nov.*

| | mm. |
|---|---|
| Total length | 175 |
| Snout to vent | 160 |
| Tail | 15 |
| Width of head | 4.5 |
| Length of head | 7 |

*Remarks.*—A single specimen was obtained. In the very low number of ventrals the species is apparently related to *Calamaria polillensis* sp. nov. and *C. joloensis* Taylor. The scale counts are almost identical with those of *C. polillensis*, but *C. hollandi* differs in the size of the rostral and its relation to the prefrontals. In *C. polillensis* a large part of the scale, triangular in form, is visible above. The markings are very different. From *C. joloensis* it differs in a higher number of ventrals and subcaudals, in color, and in markings.

The species is named for Mr. Guy Holland, who facilitated my collecting on Basilan Island, and to whom I am indebted for numerous courtesies.

**Boiga schultzei** sp. nov. Plate 3, fig. 3.

*Type.*—Unnumbered specimen in the collection of W. Schultze, Manila; collected in Palawan by C. M. Weber.

*Description of type.*—Rostral visible above as a narrow line, one and one-fourth times as wide as high; internasals about as broad as long; prefrontals very much broader than long, bent down over side of snout, the suture between them one and one-half times as long as that between internasals; frontal a little longer than broad, equal in length to its distance from rostral; parietals a little broader than long, followed by a single enlarged median scale; supraoculars a little longer than frontal, but narrower; nostril very large, pierced in a single large nasal; loreal small, distinct, longer than high; preocular three times as high as wide; two postoculars; two anterior temporals followed by three posterior; seven upper labials, third and fourth entering eye, third much elongate, fifth highest; mental triangular, as wide as rostral; ten lower labials, first five touching first pair of chin shields; first pair of chin shields broader but shorter than second pair; six rows of scales between posterior lower labials and ventrals; eye large, its diameter equal to its distance to end of snout; ventrals, 265; subcaudals, 140; anal, single; scales in 19 rows.

*Color in alcohol.*—Grayish, the entire upper and lower surface strongly powdered with very small black dots; body traversed with seventy-six darker blotches, each blotch with an indistinct darker transverse bar, the interspaces rather yellowish; bars do not extend on belly; bars on tail very indistinct; two well-defined dark lines on sides of belly; throat and chin cream; no dark line behind eye; head with minute black dots; low on sides is an inconspicuous row of yellowish cream spots.

*Measurements of the type of Boiga schultzei sp. nov.*

| | mm. |
|---|---|
| Total length | 1,410 |
| Snout to vent | 1,040 |
| Tail | 370 |
| Length of head | 13 |
| Width of head | 20 |

*Variation.*—There is a single cotype in my collection presented to me by Mr. W. Schultze. It agrees with the type in scalation of the head, save that the second labial is broken on the right side, making 8 upper labials on that side. The color in alcohol is light yellowish brown with 76 very narrow dark transverse bars. There are also 29 indistinct bars on the tail. There are 264 ventrals and 146 subcaudals. The specimen is a young one, collected by C. M. Weber in Palawan.

*Remarks.*—The species is related to *Boiga drapezi* and *B. angulata* (Peters). From the former it differs in having two instead of three labials entering the orbit; there are seven instead of eight upper labials; there is a well-developed loreal present.

From *Boiga angulata* the species differs in the number of labials and in the number of these entering the eye; in the character of the markings, particularly the very much larger number of bars on the back which do not cross the belly; and in the presence of the strongly defined lines on the belly.

I take pleasure in naming the species for Mr. Schultze, who is an entomologist of note and has made extensive herpetological collections in the Islands.

**Boiga cynodon (Boie).**

*Dipsas cynodon* Boie, Isis (1827) 559.
*Boiga cynodon* Taylor, Snakes of the Philippine Islands (1922) 206.

I collected a single specimen of this species at Abung-abung, Basilan, but failed to find it elsewhere. Mr. Otto Pflueger, of the Forestry School, at Los Baños, Laguna Province, presented me with two young specimens which were collected low on Mount Maquiling. I purchased from a curio dealer in Manila a young specimen which probably was collected in Palawan or Balabac, since the jar in which it was obtained contained only species that occur in Palawan, several of which are confined to that island in the Philippines.

The Basilan specimen was killed by a Yakan, after it had entered his house at night. He had thrown the specimen away; when I obtained it in the morning ants had devoured much of the body. Consequently only the head was kept. It is uniform fawn color without any trace of marking.

I have recorded a specimen of this color from Polillo.[20]

The ventral and subcaudal scale counts are higher for Palawan specimens than the average for those from the eastern

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[20] Loc. cit.

Philippines. The species varies so greatly in color and marking that it is difficult to find two specimens marked in the same manner.

The Basilan specimen has the preoculars in contact with the frontal, which is an unusual variation. In younger specimens the eye is only a little less than the length of the snout.

*Measurements and scale counts of Boiga cynodon (Boie).*

| No. | Locality. | Sex. | Length. | Tail. | Ventrals. | Subcaudals. | Upper labials. |
|---|---|---|---|---|---|---|---|
| | | | *mm.* | *mm.* | | | |
| 1461 | Basilan | (?) | (?) | (?) | (?) | (?) | 9 |
| 2210 | Palawan? | ♂ | 1025 | 240 | 269 | 150 | 9 |
| 2209 | Los Baños | ♀ | 833 | 180 | 275 | 139 | 9 |
| 2208 | do. | ♀ | 732 | 150 | 259 | 132 | 9-10 |
| (?) | Palawan[a] | yg | 643 | 153 | 273 | 154 | 9 |

| No. | Lower labials. | Labials enter eye. | Labials touch chin shields. | Scale rows. | Diameter of eye. | Length of snout. | Bars on body. |
|---|---|---|---|---|---|---|---|
| | | | | | *mm.* | *mm.* | |
| 1461 | 15 | 3, 4, 5 | (?) | 23 | 8 | 11 | ------ |
| 2210 | 14 | 3, 4, 5 | 5 | 23 | 5 | 8 | 41 |
| 2209 | 13-14 | 3, 4, 5 | 4 | 23 | 5.5 | 6 | 37 |
| 2208 | 13-14 | 3, 4, 5 | 5 | 23 | 5 | 6 | 33 |
| (?) | 13-15 | 3, 4, 5 | 5 | 23 | 4.5 | 6 | 43 |

[a] In the collection of W. Schultze, Manila.

**Laticauda semifasciata (Reinwardt).**

*Platurus semifasciatus* REINWARDT, in Schlegel, Phys. Serp. 2 (1837) 516.

*Laticauda semifasciata* TAYLOR, Snakes of the Philippine Islands (1922) 234.

This species was included in the Philippine fauna on the strength of a specimen preserved in Silliman Institute, Dumaguete, Oriental Negros. I mentioned this specimen previously[21] but had not examined the specimen carefully. I have since had an opportunity to study the specimen, thanks to the authorities of that institution. The specimen measures 1,600 millimeters; tail, 155. The color (preserved in formalin) is brown, with the scales edged with deeper brown and encircled by forty rings, grayish white on back and sides, and dim silver gray on belly. The bars are narrowed to one or two scale rows above, each separated by five scale rows. The scales are in twenty-five rows.

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[21] Loc. cit.

The anterior head scales are badly broken. There are two scales between the nasals bordering the rostral; two normal internasals; four prefrontals of which only three border the frontal; the outer one on the right side is broken into four scales. The nasal is broken into two parts, the posterior very small; one preocular is present; the frontal is nearly triangular; there are two postoculars; two anterior temporals, four posterior; seven upper labials, the third and fourth entering eye; eight lower labials; mental very small; first pair of chin shields large, broadly in contact; the second pair is widely separated by a large scale; a large scale separates the second pair from the lower labials; ventrals, 20; subcaudals, about 33 (anal region badly injured); first ventral separated from chin shields by eight scale rows.

Two living specimens of this species were obtained from a Japanese fisherman, who captured them at Olongapo Naval Station on the Zambales coast of Luzon. They are at present kept alive in the Aquarium of the Bureau of Science.

# ILLUSTRATIONS

### PLATE 1

FIG. 1. *Rana woodworthi* sp. nov. Photograph of type, natural size. The specimen is in normal condition save that the tip of the snout has been pressed down.

2. *Rana woodworthi* sp. nov. Photograph of a young cotype specimen. Compare with a young specimen of *Rana magna* (fig. 3) slightly enlarged.

3. *Rana magna* Stejneger. Photograph of a young specimen from the same locality as *Rana woodworthi*, fig. 2. Slightly enlarged.

### PLATE 2

FIG. 1. *Rana acanthi* sp. nov. Photograph of a specimen from Busuanga (chosen instead of type since it is in better condition).

2. *Rana micrixalus* sp. nov. Photograph of a cotype specimen. Slightly enlarged.

3. *Rana micrixalus* sp. nov. Photograph of the type specimen. Slightly enlarged.

### PLATE 3

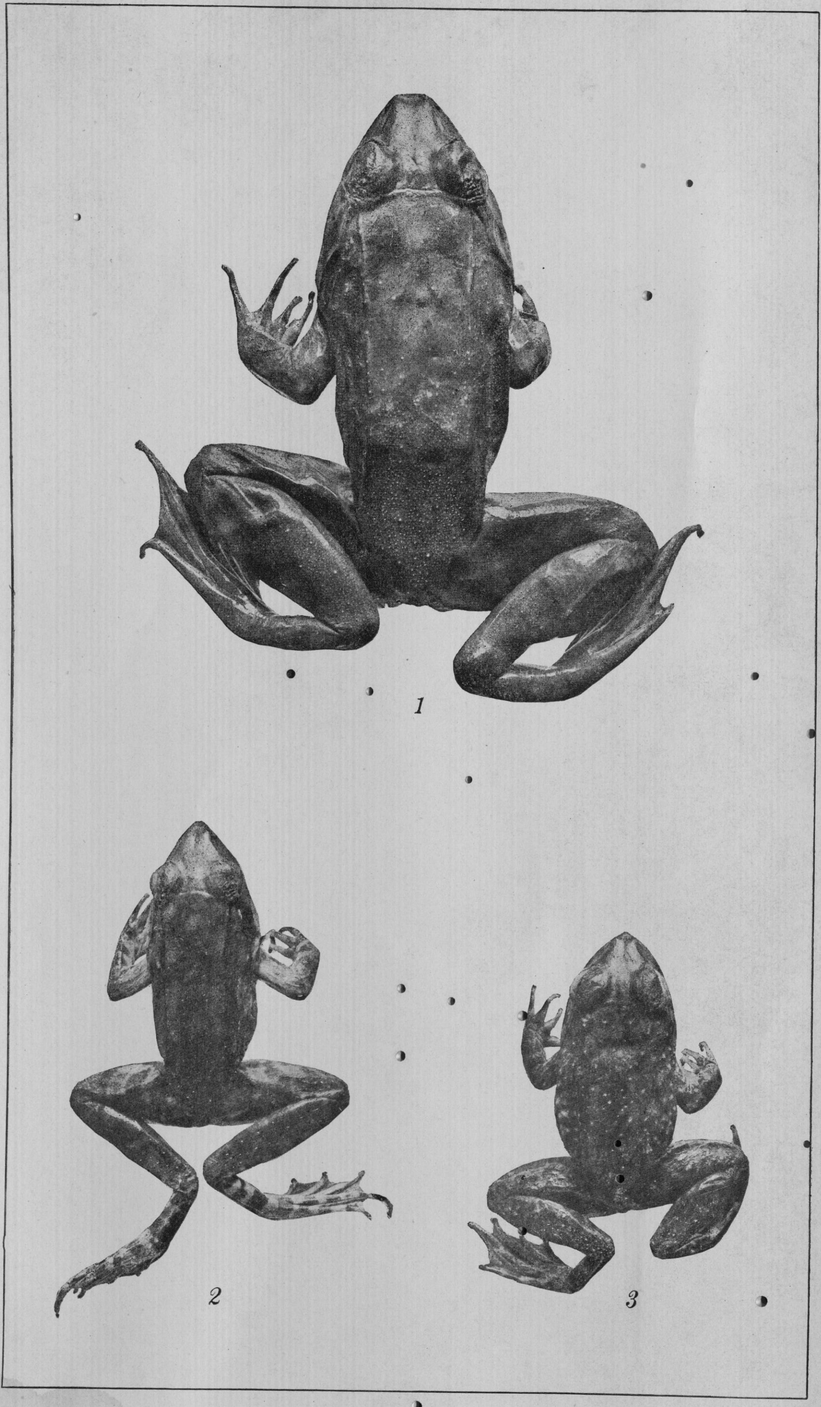
FIG. 1. *Cyclocorus nuchalis* sp. nov. Drawing of head of type, lateral view. × 2.

2. *Cyclocorus nuchalis* sp. nov. Drawing of head of type, dorsal view. × 2.

3. *Boiga schultzei* sp. nov. Drawing of head of type, lateral view. × 2.

4. *Ichthyophis glandulosus* sp. nov. Drawing of head of type, lateral view. × 3.

5. *Ichthyophis glandulosus* sp. nov. Drawing of head of type, ventral view. × 3.



1

2

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PLATE 1.

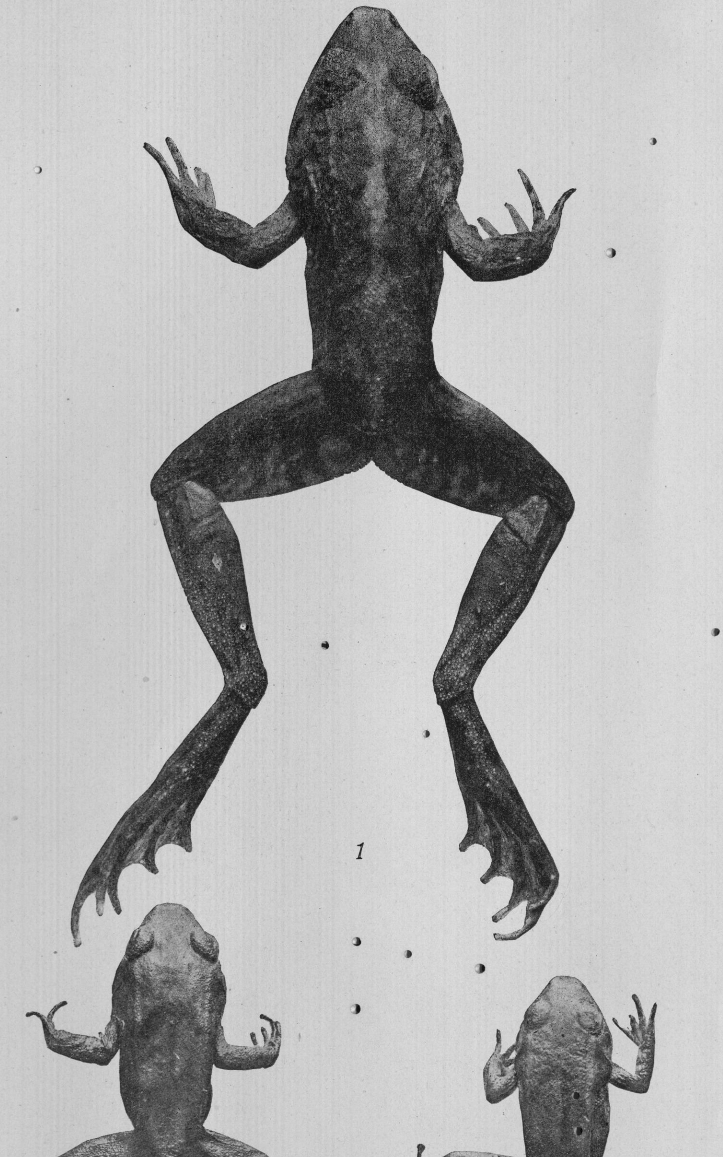

PLATE 2.

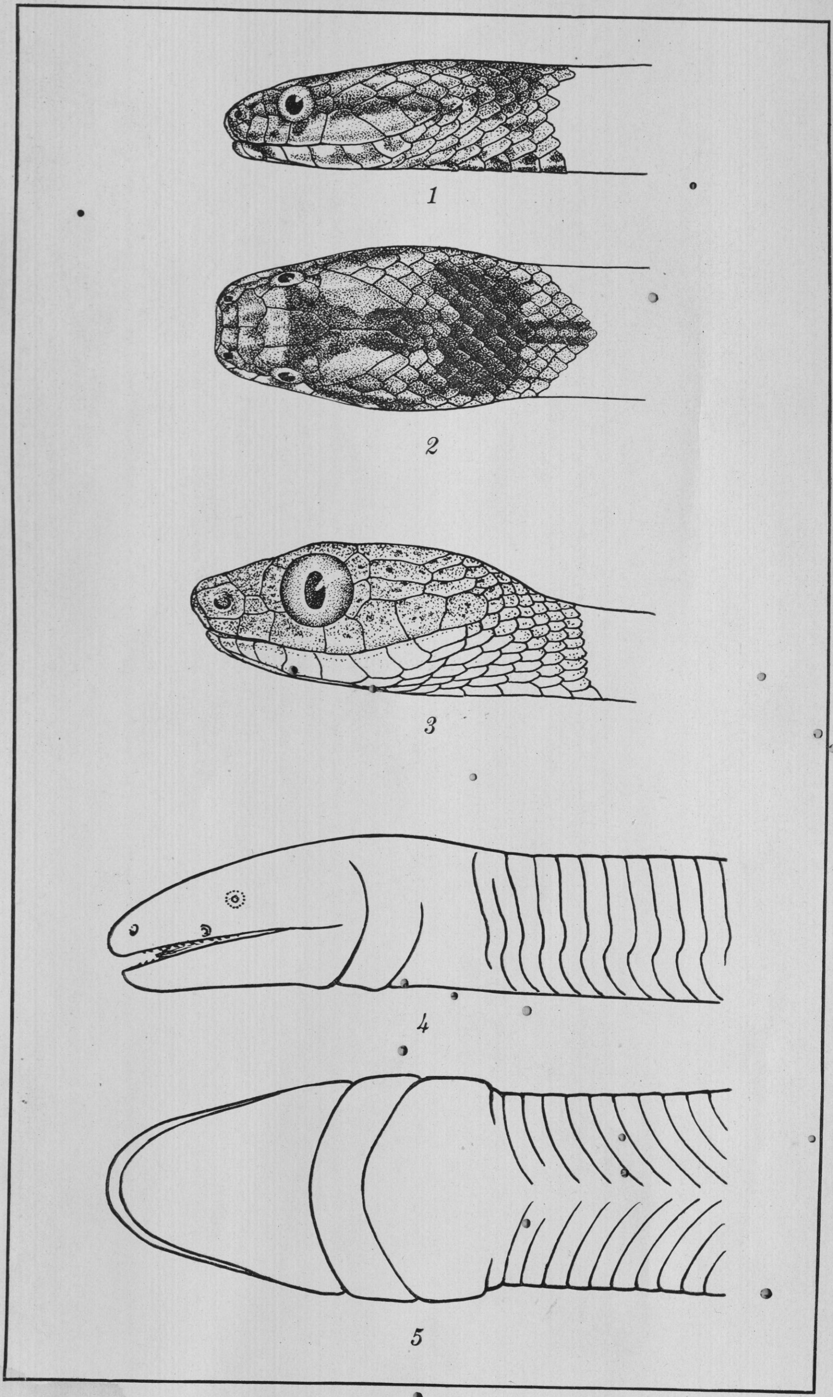

PLATE 3.